University of Alberta

Henry Oldenburg and the Philosophical Transactions: *Origins and the Development of Editorial Praxis*

by

Lindsay Reid Parker ©

A thesis submitted to the Faculty of Graduate Studies and Research in partial fulfillment of the

requirements for the degree of *Master of Arts*

in

History

Department of *History and Classics*

Edmonton, Alberta
Spring 2006

Library and
Archives Canada

Published Heritage
Branch

395 Wellington Street
Ottawa ON K1A 0N4
Canada

Bibliothèque et
Archives Canada

Direction du
Patrimoine de l'édition

395, rue Wellington
Ottawa ON K1A 0N4
Canada

Your file Votre référence
ISBN: 0-494-13747-9
Our file Notre référence
ISBN: 0-494-13747-9

NOTICE:
The author has granted a non-exclusive license allowing Library and Archives Canada to reproduce, publish, archive, preserve, conserve, communicate to the public by telecommunication or on the Internet, loan, distribute and sell theses worldwide, for commercial or non-commercial purposes, in microform, paper, electronic and/or any other formats.

The author retains copyright ownership and moral rights in this thesis. Neither the thesis nor substantial extracts from it may be printed or otherwise reproduced without the author's permission.

AVIS:
L'auteur a accordé une licence non exclusive permettant à la Bibliothèque et Archives Canada de reproduire, publier, archiver, sauvegarder, conserver, transmettre au public par télécommunication ou par l'Internet, prêter, distribuer et vendre des thèses partout dans le monde, à des fins commerciales ou autres, sur support microforme, papier, électronique et/ou autres formats.

L'auteur conserve la propriété du droit d'auteur et des droits moraux qui protège cette thèse. Ni la thèse ni des extraits substantiels de celle-ci ne doivent être imprimés ou autrement reproduits sans son autorisation.

In compliance with the Canadian Privacy Act some supporting forms may have been removed from this thesis.

While these forms may be included in the document page count, their removal does not represent any loss of content from the thesis.

Conformément à la loi canadienne sur la protection de la vie privée, quelques formulaires secondaires ont été enlevés de cette thèse.

Bien que ces formulaires aient inclus dans la pagination, il n'y aura aucun contenu manquant.

Canada

For Marylyn, Eugene and Eldon

ABSTRACT

This thesis discusses Henry Oldenburg (*c.* 1619-1677), one of the nascent Royal Society's most active and prolific Secretaries, as *subject.* Oldenburg launched the *Philosophical Transactions*, at first alone, though soon after its success, the journal became a joint venture between Oldenburg, his network of correspondents, and the Royal Society. With this labour, Oldenburg mobilised skills that took shape *prior* to the Society to become an 'editor' yet is typecast more as a philosophical journalist or merchant when he was Secretary, *not* an 'editor'. I argue his interests and skills took shape *prior* to his involvement with the Society: that Oldenburg developed his editor-like training during his years as an agent for the City of Bremen and tutor to Robert Boyle's nephew. Specifically, to have laboured so effectively, Oldenburg's skills necessarily predated the *Transactions*. This thesis therefore highlights a less discussed role for Oldenburg: as an editor.

TABLE OF CONTENTS

Introduction 1

I. Who Was Henry Oldenburg? 7

II. Literature Review 23

- i. Assumptions and Expectations 40
- ii. Intervention 47

III. Biography of "O" 49

- i. Early Biography 49
- ii. Agent Oldenburg 59
- iii. Keeping Up With The Joneses 65

IV. Oldenburg and Editor Functions 76

- i. Biography *Da Capo* 76
- ii. Role Work 77
- iii. In Practice 86

Conclusion 108

Bibliography 110

INTRODUCTION

This thesis discusses Henry Oldenburg (c. 1619-1677), one of the nascent Royal Society's most active and prolific Secretaries, as *subject*. Oldenburg launched the *Philosophical Transactions,* at first alone, though soon after its success, the journal became a joint venture between Oldenburg, his correspondents, and the Royal Society. With this labour, Oldenburg mobilised his skills to become an 'editor' yet is more predominately typecast as a philosophical journalist or merchant or during his tenure as Secretary in the Society. I argue his interests and skills, which were requisite for the journal's success, took shape *prior* to his involvement with the Society: that Oldenburg developed his editor-like training during his years as an agent for the City of Bremen and tutor to Robert Boyle's nephew. This thesis aims to provide a more holistic reading of early biographical material by demonstrating how Oldenburg brokered his skills akin to modern notions of 'editors' earlier than thought. I argue that to have laboured so effectively, his skills necessarily predated the *Transactions.* This thesis therefore highlights a less discussed role for Oldenburg: as an editor.

The attention paid to Henry Oldenburg (c. 1619-1677) and his involvement in mobilising social credibility to scientific lives through correspondence networks in the seventeenth-century pales in comparison to the vast scholarship on notable scientific virtuosi, such as Robert Boyle. Henry Oldenburg laboured intensively as an intelligencer and promoter of the new science in his capacity both as Secretary to the Royal Society and 'editor' to its *Philosophical Transactions.* With the first scientific periodical in England, Oldenburg carried out editor-like functions and made private, scientific lives, experiences, identities, experiments and letters public, which were all crucial tasks in order to establish—as well as to circulate—the credibility of scientific lives in Restoration England. The journal's printing and circulation throughout the continent enabled Oldenburg to take a loose network of enthusiasts and, as such, manage the basis for which they would interact with one another. Importantly, this 'manager' function entailed managing and programming the natural philosophic content in the journal, as well as determining the consequences of the interaction order in letter-writing. The calibration of Oldenburg's skills is closely related to that of an editor's function, yet less often is Oldenburg referred to as an editor in his own right, but instead his editor-like functions are a result of his other major tasks: predominately, his Secretaryship to the Royal Society. The notion of an editor and his duties is therefore problematic when applied to early modern England because, as Dorothy Stimson has noted, the "intelligencers of the seventeenth century gave way to the editors of the eighteenth century,"[1] meaning that the work of men like Oldenburg established a context for future editorial achievement in the next century. Where, then, did Oldenburg develop his skill, from which we can refer to his activities as editorial? From whence did he learn his methods in deploying natural philosophic content? What were his influences? Further, how did Oldenburg manage his own role with the Society and the *Transactions*, let alone others? This thesis addresses these questions.

The need for an editor in Restoration English science was pivotal for the production of social effects. Someone who occupied an 'editor-like' post was also someone who introduced another's ideas in print. Further, through this, someone exercising editor-like functions, made scientific lives credible and public, established communication ties, and made scientific lives develop in relation to—and discussion with—one another, based on information procedures in periodical productions. In this way, Henry Oldenburg, as an 'editor,' significantly policed the voice, content, method and ability of other scientific lives in the realm of communication. Through exercising an editor-like post, Oldenburg became a lifeline to reputation-making strategies in the Royal Society. Further, his activities saw him develop for himself a new public role in the Republic of Letters. Yet, at the same time, there are many unexplained elements of his contributions in the scholarship as an 'editor' or even of his role as one while concomitantly being Secretary. For instance, case studies dealing specifically with Oldenburg operate in two arenas. Some treat Oldenburg as an object of study, examining the world of relations Oldenburg managed, but not Oldenburg himself. In doing so, these works tend to denote Oldenburg as a passive labourer for the Royal Society, thereby dealing with him primarily in relation to activities he performed as Secretary. In contrast, there are those who address Oldenburg as a subject: an active creator and manager of philosophic content and culture.

---

[1] Dorothy Stimson, 'Haak, Hartlib and Oldenburg: Intelligencers," *Isis* 31, no. 2 (1940): 345.

This latter group forms my thesis' interest because these kinds of discussions and modes of examination prompt a dialogue on the social technologies of selfhood and the development of role. Those who wish for deeper psychological insight into Oldenburg's personal motivations are often left disoriented because the role he performed was chiefly public.[2] Steven Shapin, for instance, points to the apparent nullity of Henry Oldenburg as a private man in the extant biographical literature, such that this was a necessary condition for the successful performance of his public duties.[3] With respect to the publishing of the 13 volumes of the Oldenburg's correspondence, edited by Hall and Hall, we are given empirical data, addressing the scientific lives and relations Oldenburg held in his repertoire, which signals his importance. Yet, in these volumes, there is less concentration on his earlier role, prior to the Royal Society, and even less on the establishment of his future public role, particularly what enabled it. While this thesis does not plan to add to these primary materials, my intervention is in more firmly establishing the relationship between these early materials and those that follow.

---

[2] Steven Shapin, 'O Henry,' *Isis* 78, no. 3 (1987): 418.

My thesis asks if it is plausible for us to view Oldenburg's activities in the 1660s and 1670s as consistent with his trajectory and activities when he was a younger man in the 1640s and 1650s. This presumes that he had an agenda and thus explores his skills and activities that placed him in a position to work in an editorial capacity for the Royal Society. In his biographical material and correspondence, there is, significantly, the development of a role that fitted the needs of the Royal Society while he was Secretary. Approaching Oldenburg's biography—both development and activities—with anthropological and sociological literature therefore enriches the meanings and complexity of the nature of his role, largely for their interpretive value. Using different approaches, in this way, enables us to record different trajectories that still arrive at the same conclusion: that of Henry Oldenburg's editorial and natural philosophic contributions to the Royal Society. Yet, using the social literature as part of my methodology enriches historical approaches by revealing how, in the early correspondence, Oldenburg actively constructed an identity for himself. This comes to be a way of approaching empirical, biographical material in that it permits interpretation of identity and roles, which overlap.

---

[3] *Ibid.*

In scope, my thesis entails a re-assessment of biographical approaches to Oldenburg's life. In this task, it is essential to specify the height of his involvement with the Royal Society as a result of his prior activities. I therefore limit my interpretation of his early years, 1641-1661, to the successive stages leading up to the *Philosophical Transactions* in 1665. These years, crucially, reveal a development of a public presence that was by 1665 institutionalised by the Society. The aspects of this work I conduct include, chiefly, a case-study based approach in biography. This is to say, I address Oldenburg's early life (pre-Royal Society) and deploy characteristics that later became symbiotic to the work Oldenburg accomplished with the Royal Society. In doing so, my aim is to apply role literature and role concepts that pertain to a general reframing of approaches to Oldenburg, but also more specifically to demonstrate the public role he performed.

My approach then is to sketch a biography of Henry Oldenburg that looks to when he was younger and not exclusively in England, when he was not yet affiliated with the Royal Society. This thesis commences with Oldenburg's life *in medias res* with the Royal Society and then looks backward to his earlier correspondence work in the 40s and 50s and concludes with an interpretation of labours in the 1660s. The primary focus is of the communicative milieu prior to his formalised duties in the 1660s and 1670s.

The following pages are, firstly, retrospective, but they are also progressive in their breadth. Accordingly, each section designs a construction for the next. In the first section, I gesture towards the complexities of ascribing to Oldenburg only a secretarial designation. In the second section, I explain how different scholars approach Oldenburg, using, what I call, a subject-object foundation for explication. I discuss those authors who write on Oldenburg as subject, and then I suggest an alternative way for re-reading Oldenburg in this fashion: with 'editor'-like functions or in an editorial capacity in addition to his Secretarial post. In section three, I trace a brief biography of Oldenburg from the time he finished his Masters degree to when he joined the Royal Society in 1661. I explore the characteristics that, in section four, I show Oldenburg further deployed but *did not* automatically generate during those later years.

I.

WHO WAS HENRY OLDENBURG?

Who was Henry Oldenburg? The following thesis is not the first body of work to address this question.[4] Oldenburg's standard historical identification situates both the man and his work in terms of three reference points: his Secretaryship to the Royal Society (1660-1677),[5] the *Philosophical Transactions* (1665-1677), and the translation and presentation of various scientific books and letters throughout his tenure.[6] Because of his dominant institutional affiliation with the Royal Society, Oldenburg's term as Secretary often plays a secondary role to the typical nature of inquiry historians make into the activities of the Royal Society. A. Rupert Hall, in his entry on Oldenburg in the *Dictionary of Scientific Biography*, for example, records that Oldenburg was one of three eminent secretaries of scientific societies in the seventeenth century.[7] In the same fashion, Marie Boas Hall, in *her* entry in the *Oxford Dictionary of National Biography* develops Oldenburg's profile as a natural progression, one that inevitably led up to his involvement with the Royal Society.[8] As Secretary, then, Oldenburg's life is depicted as one of gradual, steady stages: a series of requisite steps to building appropriate authority and agency for, first, being a Secretary of the Society and, secondly, promoting the Society's aims through natural philosophic correspondence and periodicals. As Secretary, Oldenburg's other reference points fall under this very broad category of work, rendering his labour for the *Transactions*, Council duties (e.g., presenting letters and recording minutes at meetings, overseeing the clerk, and acting as 'Secretary'), and translation work interchangeably.[9] In effect, Oldenburg becomes intelligible through the schema of his position as Secretary.

---

[4] I am indebted to the Halls (A. Rupert and Marie Boas) for their contributions to this field and wealth of resources on Henry Oldenburg.

[5] Oldenburg was formally elected as Secretary once Charles II granted the Society its Royal Charter in 1662; until that point, Oldenburg was appointed a member of the Council in the Society's affairs and assumed much of the work as Secretary. It would appear that the Charter was merely a formality in his normative designation. See Thomas Birch, *History of the Royal Society of London for the Improving of Natural Knowledge* (London: A. Millar, 1756-1757), vol. i, pp. 8, 15, and 88.

[6] R.K. Bluhm, 'Henry Oldenburg, F.R.S. (c.1615-1677),' *Notes and Records of the Royal Society of London*, Vol. 15 (Jul., 1960), 187-193.

[7] A. Rupert Hall, 'Oldenburg, Henry,' *Dictionary of Scientific Biography*, ed. Charles Gillespie, Vol. X (New York: Charles Scribner's Sons, 1974): 200.

[8] Marie Boas Hall, 'Oldenburg, Henry (c.1619-1677),' *Oxford Dictionary of National Biography* (Oxford University Press: 2004). [http://www.oxforddnb.com/login/ezproxy.library.ualberta.ca/view/article/20676]. Accessed 18 August 2005.

However, *authority* and *agency* are but two types of characteristic traits Oldenburg used as Secretary that embody his modern biographical definitions, specifically with the aim of deploying the public image and the natural philosophic aims of the Society.[10] As a result of his efforts, the core substance of the early Royal Society has been attributed in scholarship to the diligence and exploits of Oldenburg.[11] On the one hand, authority was what Oldenburg required in order to write as the secretary of a public body devoted to the promotion of the sciences, to the extent that the very degree of 'authority' he used was, arguably, on par with earlier intelligencers, such as Samuel Hartlib and Marin Mersenne.[12] On the other, Oldenburg's role as Secretary was dominated by the ceaseless maintenance of natural philosophic and experimental correspondence, both incoming and outgoing, for the Royal Society. By virtue of his post, Oldenburg was *de facto* an 'intelligencer,' for his correspondence represented an "agency for the promotion of the new philosophy throughout Europe."[13] Where *authority*, then, represents the intellectual currency

---

[9] Marie Boas Hall, *Henry Oldenburg: Shaping the Royal Society* (Cambridge University Press, 2002), 74.

[10] Michael Hunter, 'Promoting the New Science: Henry Oldenburg and the Early Royal Society,' *History of Science* 26 (1988): 170.

[11] Michael Hunter, *Science and Society in Restoration England* (Cambridge University Press, 1981), 50.

[12] Michael Hunter, 'First Steps in Institutionalization: The Role of the Royal Society of London,' in *Solomon's House Revisited: The Organization and Institutionalization of Science*, ed. Tore Frängsmyr (Canton, MA: Science History Publications, U.S.A, 1990): 24.

[13] Hunter, 'Promoting the New Science: Henry Oldenburg and the Early Royal Society,' 165-166.

Oldenburg possessed as Secretary, his *agency*, conversely, was symbiotic with the geographical and natural philosophic confirmation of his authority through his ability to uphold correspondence networks for the Society. The two, agency and authority, intertwine and cannot be separated from each other.

Aside from being habitually portrayed as an enabler of the Society, Oldenburg has also been characterised as a scientific administrator. Marie Boas Hall writes that Oldenburg promoted the new science and, thus, she has referred to him as a "promoter of philosophic intelligence."[14] This promotional trait alludes rightly to his professional adeptness as an administrator in scientific news for the Society and, hence, it situates him in the role of an enabler of the Society.[15] Agreement with this characterisation also promotes Oldenburg's biographical depiction as a tutor on the continent—prior to the Royal Society—as merely in preparation for his role as a scientific news centre.[16] It was during Oldenburg's earlier years that he was in his "new-found role of scientific newsmonger" and that it "was for the first time to serve a constructive purpose."[17] Implicitly, this means that Oldenburg's overall "purpose" was to carry forward and represent scientific talent for the Royal Society to the extent that the "success in his life-work is to be measured by the records he kept for the Society."[18]

* * *

Despite this typical view of Oldenburg, a look into his early life indicates something different, something with more complexity and range than his ostensibly straightforward administratorship. The years between 1665 and 1667 were perhaps the most dramatic of all in Oldenburg's life.[19] In the summer of 1665, the Plague swept through London. But one year before the Plague, Oldenburg became a widower when Dorothy West, his first wife, to whom he had been married only two years, died.[20] Then, in early September of 1666, the Great Fire of London spread throughout the town, affecting residences and living situations of members of the Society. And furthermore, in the following summer of 1667, Oldenburg was imprisoned in the Tower of London. Oldenburg wrote to Robert Boyle, his friend and patron, depicting his own dismal existence from his imprisonment in the Tower, and said

---

[14] Hall, *Henry Oldenburg: Shaping the Royal Society*, 125.

[15] *Ibid.*, Preface, vi.

[16] Marie Boas Hall, 'Oldenburg and the Art of Scientific Communication,' *British Journal for the History of* Science, Vol. 2 (1965): 277.

[17] *Ibid.*, 279.

[18] Patrick Linstead, 'Foreword,' in *The Correspondence of Henry Oldenburg*, I, eds. A. Rupert Hall and Marie Boas Hall (Madison: University of Wisconsin Press, 1965): xviii. Here, Linstead refers to the twelve volumes of the *Philosophical Transactions*, which Oldenburg edited, and the correspondence.

> Not a few came to the Tower, merely to inquire after my crime, and to see the Warrant, in wch when they found, that it was for dangerous deseins and practices, they spred it over London, and made others have no good opinion of me. Incarcera audacter, semper aliquid haeret... I have learned, during this commitment, to know my reall friends.[21]

His penury was known, and the petition he wrote to Charles II received no reply.[22] All of these events took place before the Royal Society granted Oldenburg a salaried office of

---

[19] Marie Boas Hall and A. Rupert Hall, 'Introduction,' *The Correspondence of Henry Oldenburg*, III (Madison: University of Wisconsin Press, 1966), xxiii.

[20] A. Rupert Hall and Marie Boas Hall, 'Some Hitherto Unknown Facts about the Private Career of Henry Oldenburg,' *Notes and Records of the Royal Society of London*, Vol. 18 (Dec. 1963): 96-97. Oldenburg and West were married on 20 October 1663. Oldenburg remarried on 13 August 1668 to Dora Katherina Dury, the daughter of John Dury. See Hall, *Henry Oldenburg: Shaping the Royal Society*, 277. Oldenburg was Dora's ward, as her father was travelling on the Continent and unable to return to England.

[21] *The Correspondence of Henry Oldenburg*, eds. A. Rupert Hall and Marie Boas Hall, Vol. III, (Madison: University of Wisconsin Press, 1966), 473. Oldenburg to Boyle, 3 September 1667. The Latin translates as "Be bold in condemning to prison, for something always sticks." Translation is by the Halls, 473. John Evelyn is reported as being one of Oldenburg's only friends to visit him. For more information, also see Douglas McKie, 'The Arrest and Imprisonment of Henry Oldenburg,' *Notes and Records of the Royal Society of London* 6, no. 1 (1948): 28-47.

[22] *Correspondence*, III, 453. Oldenburg to Charles II, 20 July 1667. Oldenburg's petition was an enclosure in a letter of the same day to Lord Arlington, whom he also petitioned for aid. As the Halls argue, it is likely that Charles II did not receive the letter, as is suggested by the fact that this petition was preserved in the office of the Secretary of State.

£40 per annum in 1669.[23] It would seem plausible to conjecture that these calamities would be enough to retard Oldenburg's labour, though his activities and affairs direct our attention differently, again indicating a more complex role for Henry Oldenburg than simply that of an enabler of the Society.

During his imprisonment, much of the scientific communication Oldenburg had received daily ceased, and the regular meetings of the Council of the Society became intermittent.[24] However, by the end of September and by the beginning of October 1667, Oldenburg re-acquainted himself with the council, resumed his affairs, and was already reading from Boyle's latest treatise entitled *Of the Origins of Forms and Qualities*.[25] During the Great Fire of the London, when the Society decided to take up its meetings at Dr. John Pope's lodgings in Gresham College,[26] Oldenburg still maintained connections; he was even permitted to see a copy of Dr. Christopher Wren's designs for the reconstruction of London.[27] Directly after this time, Oldenburg also decided to stay in London, having been offered opportunities to resume his tutoring abroad.[28] When the Plague hit London in 1665, the Society halted much of its business, with many officers retiring to Gresham.[29]

---

[23] Birch, *History*, III, 355.
[24] *Ibid.*, 193. "*Sept. 30.* The meetings both of the council and the society having been intermitted for some time, the council met this day in order to summon the society to return to their ordinary meetings, and for some other affairs."
[25] *Ibid.*, 194. This was at a meeting of the Society on 3 October 1667, whereas the meeting on 30 September was of the council, which was ready to resume its business.
[26] Notably, the father of the poet Alexander Pope.
[27] *Ibid.*, 115, Wren had drawn up a model for the new city and presented it to the King, of which Oldenburg was able to see the designs, thinking, had it not already been presented to the King, Oldenburg would have liked to have seen it as being presented from the Society. He writes on 18 September 1666, "I then told the doctor, that if I had had an opportunity to speak with him sooner, I should have suggested to him, that such a model contrived by him, and reviewed and approved by the Royal Society, or a committee thereof, before it had come to the view of his Majesty, would have the society a name, and made it popular, and availed not a little to silence those, who ask continually, What have they done?" This quote is taken from Birch, III, 115.
[28] Birch, III, 354.
[29] Idem, *History*, II, 57-58. The Royal Society met in early June, and then adjourned to 28 July, after which, a formal meeting of the Society was not called until the spring of 1666, where the interim meetings were all meetings for members of the Council. See Hall, *Henry Oldenburg: Shaping the Royal Society*, 97-98.

However, the President, Viscount Brouncker, and the Secretary, Oldenburg, remained in London. It was in 1665 that the first folio of the *Philosophical Transactions* was printed,[30] and the effects of the Plague were giving cause for everyone who had the means to abandon London. Public notice was given in the *Transactions*, advising the Reader that

> by reason of the present Contagion of London, which may unhappily cause an interruption as well of Correspondencies, as of Publick Meetings, the printing of these *Philosophical Transactions* may possibly for a while be intermitted; though endeavours shall be used to continue them if it may be.[31]

For Oldenburg, this meant that much of the activity of communicating with printers for the *Transactions*, would have to be halted.[32] Since the Society was meeting informally, and perhaps for want of something to do in Oxford, Oldenburg continued work on his Correspondence, submitting papers to Robert Boyle in Oxford. Furthermore, the publishing trade's general movement away from London would have jeopardised the publication of the newly formed *Transactions* were it not for Oldenburg and Sir Robert Moray, who devised a plan to have the printing moved to Oxford, where most of the Society's members were located.

The Society's official printers were then Martin and Allestry in London.[33] Together, Boyle, Moray and Oldenburg were worried about halting the *Transactions* so shortly after it had been begun. Moray found lodgings in Oxford, and with Boyle, Wallis, and by the agreement of other Fellows of the Society, they decided that the resumption of the *Transactions* was crucial and therefore so too was the importance of finding an adequate printer in Oxford. Accordingly, those present in Oxford immediately named the printer

---

[30] 6 March 1665.

[31] *Philosophical Transactions*, No.5, 3 July 1665.

[32] Hall, *Henry Oldenburg: Shaping the Royal Society*, 99-102.

[33] *Ibid.*, 101; C. A. Rivington, 'Early Printers to the Royal Society,' *Notes and Records of the Royal Society of London*, Vol. 39, (1984):1-2. Martyn and Allestry had been printers to the Society's members prior to the Royal Society's institutionalisation.

Richard Davies, who had handled many of Boyle's books.[34] Davies agreed, but under the proviso that he not be required to pay Oldenburg as high a fee as his London counterparts. Oldenburg was, albeit, disappointed by the lower remuneration and his generally lesser revenue, but he evidently thought it more important to see the journal continue than to let it cease.[35] The journal's continuation, at this time, required Oldenburg to post the philosophic content up to Oxford, while, at the same time, he would become worried about the loss of its content in post (as well as the loss of direct control through overseeing how the printers handled it). Therefore, in a time of great peril for the Society, thanks to Oldenburg, the journal continued its publication when it was felt most critical that it endure.

During these years of activities for the Society and the *Transactions*, Oldenburg was also building correspondence networks, both domestic and foreign. In 1665, Oldenburg had 24 correspondents, compared to 16 in the previous year; and by 1667, his network expanded to 45. Of the 24 in 1665, 11 were foreign, and of the 45, in 1667, the number of foreign contributions expanded to 26. By 1670, his network peaked at a number of at least 70. Thereafter, the numbers were anywhere in between 43 to 70.[36] There are approximately 2,911 surviving letters from the period of 1663-1677.[37] By the end of 1667, extant letters from that year, both to and from Oldenburg, total 148. Yet, the following year the total surged by more than double to 326.[38] Those with whom Oldenburg was in contact at this time included such figures as Boyle, Hevelius, Huygens, Auzout, Beale,

---

[34] *Ibid.*, 102.

[35] *Ibid.*, 102. The journal was Oldenburg's livelihood, such that a loss in pay suggests his commitment to the intellectual material of the Society.

[36] *Ibid.*, Table 2, 358.

[37] *Ibid.*, Table 1, 358.

[38] *Ibid.*, Table 1, 358.

Hooke, Balle, Finch, Taylor, Williamson, Lubienietzki, Colepresse, Bouillard, and Fairfax, just to name the most significant. This further points to the broader context of Henry Oldenburg's work than can be glimpsed under the schema of both an administrator and Secretary, as the two were also intertwined.

These letters written to Oldenburg were, by and large, considered as property of the public domain.[39] No one doubted that he would relay the contents of letters; in fact, it was expected.[40] Tied to this expectation and contemporaneous with the beginning of the *Transactions* was the conclusion of a long affair regarding priority over natural philosophic experimentation on an international scale and involving the reporting of content in letters. The controversy between Robert Hooke, the Royal Society's curator of experiments, and Adrien Auzout, of France, was a dispute of great significance, in which Oldenburg became a defender of Hooke. Intermingled in this dispute was the subject of lunar astronomy, the grinding of lenses and the potentials of telescopes.[41] Auzout found a way to criticise Hooke's proposal for lenses in telescopes (in the introduction of his *Micrographia*) on the grounds both that Hooke had announced his design without constructing an example of his proposed machine to prove that it would work and also that Hooke was too optimistic in considering that the construction of telescopes with great focal length and spherical lenses would allow better detection of detail on the planets.[42] Letters were written to Oldenburg from Auzout in French (a language Hooke was unable to read). Oldenburg promptly dealt with the matter by including in the first volume of the *Philosophical*

---

[39] Hall and Hall, 'Introduction,' *Correspondence*, Vol. II, xxii.
[40] *Ibid.*
[41] Idem, *Henry Oldenburg: Shaping the Royal Society*, 140.
[42] *Ibid.*, 140.

Transactions a translated copy of Auzout's observations[43] with a rebuttal and 'vindication' of Hooke's work directly following.[44] Oldenburg, further, wrote to Auzout on 23 July 1665 stating

> Mr. Hooke salutes you, and affirms that he is very particularly obliged to you for your conduct towards him, in the letter you addressed to me. Surely, Sir, it is indeed the right way to manage a correspondence between two worthy men and fine minds, when each expresses to the other his thoughts and discoveries in a polite way, without offence given or taken, so that their minds may reciprocally stimulate each other and learn from each other, to the further progress of knowledge. If you please to continue in such conduct towards the author of *Micrographia* (who is certainly very learned in mathematics and mechanics) I can promise you that you will find him free and generous in acknowledging your civilities, and capable of recompensing you for the discoveries you may please to communicate to him… If you wish, I will be the go-between, since you do not know enough English to write to him nor he enough French to reply.[45]

This was a central matter in the first volume of the *Transactions*—its importance was not diminished by the need to calm possible foreign disagreements for the reputation of the Society. The dispute allowed Oldenburg to establish authority in his adeptness in not only balancing a controversy, but also settling it with his agency by presenting it in the public domain as well as corresponding directly with the parties involved.

Furthermore, the *Transactions* became a central part of the Society's resources for dispute resolution in the absence of 'international' societal meetings, in part because the *Transactions* recorded the dates of specific inventions and discoveries.[46] As a defender of English pre-eminence in experimental philosophy, for instance, Oldenburg was also engaged in settling the dispute between Christopher Wren and Richard Lower, on the one hand, and Johann Major, a physician from Hamburg, on the other. The disagreement was over the priority of the invention of venous injections. The dispute was published in the *Transactions* and involved about five years of Oldenburg's time. It was also an instance where the dangers of non-publication were readily understood, since to publish meant to establish the right to a truth claim regarding experimentation and invention.[47]

---

[43] See Adrien Auzout, 'Considerations of Monsieur Auzout upon Mr. Hook's New Instrument for Grinding of Optick-Glasses,' *Philosophical Transactions*, Vol. 1 (1665): 57-63.

[44] Robert Hooke, 'Mr. Hook's Answer to Monsieur Auzout's Considerations, in a Letter to the Publisher of These Transactions,' *Philosophical Transactions*, Vol. I (1665): 64-69.

[45] *The Correspondence of Henry Oldenburg*, Vol. II, edited and translated by A. Rupert Hall and Marie Boas Hall (Madison: University of Wisconsin Press, 1966), 441-443. Oldenburg to Auzout, 23 July 1665. The remainder of this letter is a defence of Hooke and his method of making the lenses.

[46] Hall, *Henry Oldenburg: Shaping the Royal Society*, 142.

Oldenburg, throughout the period, was by no means financially secure. When the first volume of the *Transactions* was published, it was Oldenburg's belief that the moneys earned would total approximately £150 per annum, payable to him as profit, since it was initially his own work, just licensed by the Society.[48] The difficulties of realising any such profit became clearer when Oldenburg barely earned £50 a year, which surely hit him hard financially. Because he had had to continue his labours in order to support his family, Oldenburg also took on a great deal of translating work. He was Boyle's trusted friend, publisher and translator. In fact, Oldenburg made Latin translations of nearly all of Boyle's work as they came off the press. Notably, by 1665, Oldenburg had published Boyle's *Experiments and Considerations Touching Colours* and his *New Experiments and Observations Touching Cold.*[49] As a publisher, Oldenburg wrote a prefatory note, saw the manuscript through the press, attended to the proofreading, and most likely acted as an intermediary between Boyle and the particular printer of the time.[50] As a translator, Oldenburg was probably earning somewhere near 10 shillings per sheet of Boyle's translated work by 1668 (a rate of pay that likely buttressed his finances), since he was earning these amounts by 1671 and 1672.[51] The undertaking must have been great, and when Oldenburg died in 1677, Boyle, perhaps more than any other, felt the loss of a close friend, intellectual companion, translator, publisher and neighbour. In his *General History of Air*, published posthumously in 1692, the prefatory note is a tribute to Oldenburg, as it is addressed to him as a response to his own query with regard to what Boyle really thought about the nature of air and what it was.[52]

---

[47] *Ibid.*, 143-144.
[48] *Ibid.*, 85-86.
[49] Hall and Hall, 'Introduction,' *Correspondence*, Vol. II, xxiv.
[50] *Ibid.*

As a further indication of Oldenburg's multi-faceted workload stands Oldenburg's dedication to the Society's needs for resources. By the winter of 1667/8, and after his Tower episode, the Royal Society had hoped to raise enough money to build its own College.[53] It was in the context of this (unfortunately aborted) enterprise that Oldenburg's enthusiasm led to his preparing a list of his best books, which he entitled, 'Catalogue of my best books and what they cost me.'[54] The list, which was most probably collected by Thomas Birch when he wrote his *History of the Royal Society*, reveals that Oldenburg was also a collector during this period.[55] This first list is one of three, with the other two drawn up in the 1670s. It is of interest because it indicates the general sphere of knowledge Oldenburg would have used when he sat down to write his letters. For someone who was poor, Oldenburg managed to accumulate a list of 70 books, valued, by his own hand, at a sum total of £29 17*s*.[56] By 1668, Oldenburg's personal library included the works of Descartes, Hartlib, and Mersenne, to name a few, and it contained works in the following languages: English, French, Italian, and Latin. The collection was one that Oldenburg had wanted to donate to the Society's library for the proposed new building of the College, but the building project collapsed.[57]

---

[51] *Ibid.*

[52] Hall, *Henry Oldenburg: Shaping the Royal Society*, 301.

[53] Noel Malcolm, 'The Library of Henry Oldenburg,' *eBritish Library Journal*, Article 7 (2005): 2.

[54] BL, Add. MS. 4255, ff. 237-238r, as seen in *op cit.*, Noel Malcolm's 'The Library of Henry Oldenburg,' 1. Malcolm ascribes the date Oldenburg wrote this list quite positively as being in the early months of 1668.

[55] Malcolm, 'The Library of Henry Oldenburg,' 2.

[56] BL, Add. MS. 4255, ff. 237-238r, as seen in *op cit.*, Malcolm's 'The Library of Henry Oldenburg,' 23-25. For a complete list of the books, please refer to Malcolm's article.

The years immediately following Oldenburg's absence from the Society while in the Tower represent a period of extraordinary growth of the *Philosophical Transactions*. Oldenburg's responsibilities to the journal were to convey the differing perspectives regarding natural philosophic polemics, as well as to translate and distribute knowledge of new inventions and contents of treatises as they were delivered to him. The first volume of the *Transactions*, for some reason (perhaps attributed more to ceaseless interruption) ran from March 1664/5 to 1666/7.[58] Later, however, the journal spanned a yearly calendar, beginning in the month of March.[59] From this point onward, one of Oldenburg's primary objectives at the centre of philosophical networks was to mobilise a yearly journal that he edited, in which he translated and interpreted works himself, and for which he wrote book reviews. The importance of Oldenburg's interpretive work should not go unnoticed. Oldenburg often translated the viewpoints of foreign learned letters in order to represent them to his audience, both domestic and foreign. As a result, the body of the *Transactions* carried Oldenburg's voice throughout, intimately tied to his agency and authority.

***

Henry Oldenburg was a man at the centre of natural philosophic life in England after the

---

[57] *Op cit.*, Malcolm, 'The Library of Henry Oldenburg,' 1. Malcolm ascribes the date Oldenburg wrote this list quite positively as being in the early months of 1668. The text, in Oldenburg's own hand, reads: "I Henry Oldenburg Secretary to the R. Society of London for Improving Natural Knowledge, do give unto the President, Councill and Fellows of ye s[ai]d Society, for their Library, to be sett up in their Colledge, intended to be built vpon ye ground near Arundel house given for that huse by the Hon[oura]ble Henry Howard of Norfolk; And doe hereby engage myself, my Heires, Executors, Administrators and Assignes, to deliver to whomever ye s[ai]d Pres[ide]nt, Councill and Fellows shall appoint, ye Books following, viz."

[58] And was also printed almost exclusively by Martyn and Allestry. See Rivington, 3-4.

[59] Hall, *Henry Oldenburg: Shaping the Royal Society*, 85.

Restoration. By virtue of his Secretary post—for which he was to record the council minutes, present experiments, and read aloud philosophic content to other members of the Society—it would seem that Oldenburg was doing much more than is typically associated with secretaryship. To simply describe Oldenburg as a Secretary would impoverish the true breadth of his role within the Society and for natural philosophic life during the seventeenth-century. There is, then, a problem between the standard ways of regarding Oldenburg and the way he is typically characterised versus this mere glimpse of a very small handful of the labours he performed in a concentrated time, labours that suggest a broader sense of his role. That is to say, not all of his tasks are confined to the category of Secretary. On any given day, for instance, Oldenburg is said to have had no less than thirty correspondents at a time.[60] Further, the method he used, records Birch, was to make one letter answer another; and never to read a letter before he had pen, ink and paper ready to answer it immediately.[61] This immediately suggests an intelligencer with an active commitment to and influence on his intellectual milieu. It would seem that the standard notions of Oldenburg as Secretary may not encapsulate the entirety of his endeavours. Furthermore, it is reasonable to infer from a brief episode in Oldenburg's life that a tremendous complexity and multi-layering of responsibilities, duties, and networks existed. In other words, examinations of his activities may require more meaningful role definitions that are more representative of *all* his work, not just *as* but *beyond* Secretary.

Therefore, one aim of this thesis is to address the contradiction that exists between the standard historiographical definitions versus the normally veiled backdrop of the complex, composite labours he executed when he was Secretary for the Royal Society.

---

[60] Birch, III, 355.

[61] *Ibid.*

Moreover, this thesis is interested in examining Oldenburg's activities and involvement in the early 1660s until the Royal Society's *Philosophical Transactions* were initiated, and, in due course bring forward a more meaningful picture of Oldenburg's role that accounts for its composite nature. When his work for the Society's members and for the *Transactions* is seen with more depth, the portrait of Oldenburg comes to evince another depiction, one that is more nuanced. That is to say, there is an instantiation—or *origin*—of a role today described as an 'editor,' which is distinct from the activities of his role as Secretary.

In order to address his later activities within the Royal Society, this thesis considers his earlier networking skills and understanding of natural philosophical correspondence during the 1640s and 50s to see if it was consistent with the skills he used in the 1660s and 70s. This assessment, therefore, prompts examination of Oldenburg's prior contributions to and engagements with natural philosophic life so that a consistent, significant sense of Oldenburg's role and contribution to the Republic of Letters emerges. By the time Oldenburg was moving on to the second volume of the *Transactions*, both his authority and agency in text selection and representation were renowned. It would seem implausible, then, to conclude that such adeptness in handling the contents of English and Continental scientific life was simply learned during only his previous five years with the Royal Society, up until 1665 when the first issue of the *Transactions* was published. Because there is such a discrepancy between the extant historiography and the actual work completed during but three years—for example, when he began 'formally' as Secretary in 1662—this work is more interested in presenting a holistic view of Oldenburg. Particularly, is it possible to pinpoint his role being pre-figured? Further, how did he learn his networking and correspondence abilities—i.e. his agency—that, especially, enabled the authority of the *Transactions* to be trusted, renowned and in demand?

The need for an editor, or someone who conducts editor-like functions, in seventeenth-century natural philosophic circles was pivotal for the production of social effects, e.g. public identities, establishing authority, making truth claims, etc. In retrospect, it therefore became important to have someone manage or broker editorial functions in the seventeenth century because an 'editor' managed the lives of natural philosophers by managing their natural philosophic materials and its communication. In order to do so, there is at present a need to look at Henry Oldenburg as a man in the midst of scientific life who had all the functions of what is anachronistically referred to as an 'editor.' An examination, further, into this specific role, vis-à-vis Oldenburg, gives historians of science an opportunity to view the origins of this role in full form.

Across Northern Europe, inquirers into natural knowledge were grappling with both formalising and stabilising communication between natural philosophers. Inquirers, for instance, in countries like England, France and Germany all agreed, in their own milieu, that the formalisation of a network was important. This is witnessed in the birth and growth of the scientific journal throughout this period in all three countries. To better understand the history of an editor function, in relation to these formalised networks of communication, there is a present and real need to re-examine the history of Henry Oldenburg to learn more about what the editor function in this period might mean, both in relation to Oldenburg and to his *Philosophical Transactions*, as well as to other Continental periodicals. By 1665, a regular medium for the distribution of natural knowledge, via the periodical, had been formalised in England, France and what is now Germany; it was Oldenburg, more than any other, who through his own networking abilities, became known domestically and abroad by virtue of his conversations with the others in the *Transactions*. Rather than simply enabling this discourse between others, Oldenburg actively shaped it and created the directions, and terms through which, it could develop and flourish.

II

LITERATURE REVIEW

Predominantly, scholarly studies of Henry Oldenburg consider his work in the time frame of 1660-1677, beginning with the year he was elected as Fellow to the Royal Society. These years are believed to have been Oldenburg's most active, ranging across his endeavours as part of the generative force of an early scientific institution, which spans the stages of his Fellowship, Secretaryship, journal publication, letter-writing and translation work, until his death in 1677. This body of literature is necessarily broad in scope because of Oldenburg's direct involvement with crucial institutionalising developments in the nascent Royal Society. Moreover, with regard to the Royal Society, this covers the period from when the Society was just a confluence of natural philosophical talent at Gresham College in Oxford to its Royal declaration in 1662; its sustained existence throughout the rest of the seventeenth century; and the confirmation of public natural philosophic talent in both England and the Continent. But the literature does not necessarily begin and end with Oldenburg. Both historiography and biography are the emblematic modes of inquiry into not just the study of Oldenburg's societal involvement but also the study of the Royal Society itself and its fellows. This latter trend typically gives cause for historians to write about Oldenburg in light of institutions, experimentation, natural philosophers, correspondence, publications and the like, but it does not lead to much discussion of Oldenburg outside these contexts. Furthermore, all of these areas were composite features of the Royal Society's growth and sustainment. They were all, as well, activities Oldenburg was a part of, binding him and the Society even more closely. Thus, to address the Royal Society means to address Oldenburg; however, to address Oldenburg does not mean to *exclusively* address the Royal Society.

It follows from this that in order to avoid obscuring the life of Oldenburg, the historian of science must also address the binary nature of what, as the rationale for study, could be termed subject- and object-styled approaches to Oldenburg, which are present in both biographies and historiographies. In the former, Oldenburg as *subject* is the focus of study; he is the active agent, and therefore demands primacy, with other objects surrounding him that are important insofar as they relate to his life. In the latter, he is the *object* of another's activities, and his own actions follow in response to this other frame of reference, such as the Royal Society. This is to say, the historiography of extant biographies of Oldenburg exists in a subject-object division: the problem being, Oldenburg is seldom even the "object" but is, rather, an "object of objects" through and through. This points to a history of both ideas and institutions rather than of Oldenburg as subject.

Howsoever this may be, both biographies and historiographies of Oldenburg—where biography aims to treat Oldenburg as the primary subject and historiography as tangential object—are united by one feature: they equally focus their consideration on his "output" in the same manner as Latour's "black box"[62] and therefore give rise to a range of questions surrounding the nature, involvement, style and changes *of* his output, as opposed to his development and the precursor stages in his life. Taken together, biography and historiography differentiate themselves by asking a different range of questions, as suited to specific research examinations. Research itself is not read without an appreciation of the stages of development: so too with work done on Oldenburg. In this way, scholarship on Oldenburg, chiefly vis-à-vis the Royal Society, has conceptually and methodologically changed throughout the 20th century and these early years of the 21st century, as well as in the 17th and 18th. My aim is to illustrate how works dealing with Oldenburg illustrate changes in style and approach, and, in doing so, I pose new questions about the nature of his "input" (a holistic view of his activities and background with Oldenburg as subject) rather than his "output" (the results of his labours in a specific context, such as in the Royal Society).

---

[62] Bruno Latour, *Science in Action: How to follow scientists and engineers through society* (Harvard University Press, 1987), 81-82 and 131. In this study, Latour notes early on that "[t]he word **black box** is used by cyberneticians whenever a piece of machinery or a set of commands is too complex. In its place they draw a little box about which they need to know nothing but its input and output" (2). The problem with this, he discusses, is that black boxes, such as the double helix, are mistakenly conceived, and that if we want to see a more holistic outline of how features and functions of science can be viewed, we need to take into consideration how science is configured less by automatons than by how the inputs, outputs and generated and sustained activities of science and intervention require holistic viewing, that is in an organised whole. The cohesiveness of many elements working in tandem as an organised whole is a black box (130-1).

This literature review briefly examines the dimensions of current and past research on Oldenburg. It considers his life in scholarship by virtue of the different types and purposes of questions raised in extant studies, and it is conducted in a manner that covers both biographies of Oldenburg himself as well as the studies of the Royal Society that feature him: i.e. studies of Oldenburg as the ostensive subject and studies of Oldenburg as object, respectively. Moreover, I contend that the focus of the literature under review is largely limited to the descriptions and attributes of the roles he performed during his tenure for the Royal Society, as they were realised exclusively in his written work, i.e., his "outputs." As such, this review ranges from 'old' to 'new' scholarship and concludes by examining the interconnectivity of two, as well as suggesting further explorations prompted by this interconnectivity.

Biographies of Oldenburg are primary works in any study of his role. There are three of note: A. Rupert Hall's entry in the *Dictionary of Scientific Biography*, Marie Boas Hall's entry in the *Oxford Dictionary of National Biography*, and her monograph *Henry Oldenburg: Shaping the Royal Society*.[63] The first two of these works are dictionary entries and situate Oldenburg in one of two ways—either professionally or personally—and they are purely descriptive. The *DSB*'s entry is reasonable, focussing on the professional designations of "Secretary," "scientific administrator," and "scientific journalist," even citing a description of a Secretary's 'job description' as authored by Oldenburg himself in 1668:

> "He attends constantly the Meetings both ye Society and Councill; noteth Observables, said and done there; digesteth ym in private; takes care to have ym entred in the Journal- and Register-books; reads over and corrects all entrys; sollicites the performances of taskes recommended and undertaken; writes all Letters abroad and answers the returns made to ym, entertaining a correspondence with at least 30. persons; employes a great deal of time, and takes much pain inquiring after and satisfying forrain demands about philosophicall matters, dispenseth farr and near store of directions and inquiries for the society's purpose, and sees them recommended etc."[64]

With regard to my contention over Oldenburg as subject or object and his inputs versus his outputs, the uninterrogated use of this quotation of Oldenburg's own words can only situate him with regard to his output and job description in the Royal Society. In a typical fashion, earlier data in this entry details his birth, university training, travels and marriage (first), but these, however, are brief in comparison to the "professional" ties ascribed vis-à-vis the Royal Society. The primary focus of relational links—friendships with John Dury, Lady Ranelagh, and Robert Boyle—is then filtered through definitions of his occupational life as it pertained to 'scientific' life.[65] The Royal Society acts as the frame for the examination of Oldenburg.

---

[63] See Bibliography for full listings: A. Rupert Hall, 'Oldenburg, Henry,' *DSB*; Hall, 'Oldenburg, Henry,' *ONDB*; and Hall, *Henry Oldenburg: Shaping the Royal Society*.

[64] Hall, *DSB*, from British Museum MS Add 4441, fol. 27; here cited from pages 200-201.

[65] Another example is A. Rupert Hall, 'Henry Oldenburg et les relations scientifiques au XVII^{e} Siècle,' *Revue*

The article in the *ODNB*, however, is less a summation of talent than that in the *DSB*, as it is a brief essay discussing Oldenburg's personal life, and because he moved in the early years both to and from England. Marie Boas Hall authors the *ODNB* entry and renders Oldenburg a man of life and of personal activity. Her portrait shadows the *DSB* in repeating a 'rise to prominence' schema through the Royal Society but then contrasts in its focus on Oldenburg's pre-Society activity, something unique amongst such approaches to Oldenburg. She includes, for example, those whom Oldenburg encountered and knew before he became engaged as a tutor to Robert Boyle's nephew, Richard Jones: John Wilkins, John Wallis, Seth Ward, Thomas Willis, Christopher Wren, Richard Lower, Robert Hooke and Christopher Huygens.[66] Notably, these were all men with whom Oldenburg was to have regular contact upon his return to England with Jones, where some of them fostered new acquaintances, such as with Spinoza through Huygens.

Hall's more recent work (2002) is the first and only—to date—biographical monograph on Oldenburg. She does far more to explore Oldenburg as a genuine subject than any other study, considering his inputs and outputs as a unified whole. For example, Oldenburg's quasi career as a diplomat for the city of Bremen was a role that helped him prepare for learning the art of scientific communication, as this was where he made contacts and established relations in England. With regard to this element of her work, I consider Hall's *Henry Oldenburg: Shaping the Royal Society* a model for my motivation for bringing to prominence the importance of the early elements of Oldenburg's life. However, the subtitle to her work indicates the framework for her study. While

---

d'histoire des Sciences 23 (1970): 285-304.

[66] See *op cit.* for Hall in *ODNB*.

Oldenburg's early life is considered, it is only with regard to that which contributed more or less directly to his position within the Royal Society that attracts Hall's most concentrated attention. For example, Hall's detailed study describes Oldenburg's work promoting philosophical intelligence during 1665-70 as prefiguring his management of scientific controversy from 1669-77, and she also emphasizes the ambassadorial role he played for Sir Isaac Newton as well as the evolution of Hooke and Oldenburg's relationship from friendship to enmity. The overall biographical treatment that can be gleaned from her book frames Oldenburg's life by centering on the tripartite division of his responsibilities in scientific communication (Secretary, editor of the *Philosophical Transactions*, and translator). The only precursor to Hall's biography is a much shorter work (14 pages in total) by R. K. Bluhm,[67] though he wrote with similar thematic divisions in mind. Bluhm provides a documentary biography on Oldenburg, spanning the early years, his work (Secretaryship, *Philosophical Transactions*, and as translator of scientific books), and character (regarding his indefatigable industriousness).

Hall's other biographical examinations of Oldenburg, with A. Rupert Hall, include "Further Notes on Henry Oldenburg," "Some Hitherto Unknown Facts about the Private Career of Henry Oldenburg," "Oldenburg and the Art of Scientific Communication" and "Why Blame Oldenburg?"[68] The first work extends the biographical treatment of the antecedent activities in Oldenburg's life that prepared him for his role in the Royal

---

[67] Bluhm, 'Henry Oldenburg, F.R.S. (c. 1615-1677),' 183-197.

[68] A. Rupert Hall and Marie Boas Hall, 'Further Notes on Henry Oldenburg,' *Notes and Records of the Royal Society of London*, Vol. 23 (Jun. 1968): 33-42; A. Rupert Hall and Marie Boas Hall, 'Some Hitherto Unknown Facts about the Private Career of Henry Oldenburg,' *Notes and Records of the Royal Society of London*, Vol. 18 (Dec. 1963): 94-103 for their examinations unto his more precise date of birth, as evidenced by one of his marriage licenses (Dorothy West, 20 October 1663); Marie Boas Hall, 'Oldenburg and the Art of Scientific Communication,' *British Journal for the History of Science*, 277-290; and A. Rupert Hall and Marie Boas Hall, 'Why Blame Oldenburg,' *Isis*, Vol. 53 (Dec., 1962): 484. See also their 'Introduction' in the *Correspondence*, i, xxix-xl.

Society, which is in line with my above comments on her biography. However, the latter three pertain to less subject-oriented matters: respectively his precise date of birth, his development as an intelligencer within the Royal Society as a scientific journalist and administrator,[69] and Hooke's dispute with Oldenburg over the communication and time lag regarding the comments Hooke made about Newton's letter on light and colours on 6 February 1671/2.[70] My aim is to further direct attention to the project of exploring Oldenburg's antecedent activities *as* antecedents, despite the general trend to the contrary in these materials. The latter three works take up admittedly significant issues, primarily conceived within the frame of Oldenburg's role within the Royal Society, but it is the potential for expanding this frame of reference, which is implicit in the first work, that I underscore.

Hall and Hall's other major contribution to studies of Oldenburg is their thirteen edited volumes of his extant correspondence.[71] These volumes are monumental and offer a significant entry to understanding and inquiring not only into Oldenburg himself but also the underlying nature of natural philosophic correspondence, as well as the interchange of ideas during Oldenburg's life. The letters to and from Oldenburg edited here add significant depth to the dimensions of histories of the Royal Society. Significantly, these letters reveal strategic interventions on Oldenburg's part into how natural philosophical life and thought moved from the private to the public realm—

---

[69] Hall & Hall, 'Further Notes on Henry Oldenburg,' 277 and 287.

[70] Hall & Hall, 'Why Blame Oldenburg?' 484. Newton's letter on light and colours was dated 6 February 1671/2, but Newton did not respond until 11 June. By specific orders of the Society, Oldenburg was to convey the letter directly to Newton on 15 February, which was subsequently recorded in the Society's minutes, Birch, *History*, III, 10. For the letter of that Hooke wrote, see Birch, *History*, III, 10-15. Oldenburg is thought to have made more trouble by conveying the letter in the first place, giving Hooke the air that Oldenburg was taking sides with Newton in trying to quell a natural philosophic dispute.

[71] *The Correspondence of Henry Oldenburg*, ed. and trans. A. R. Hall and M. B. Hall, 13 vols. (1965-86).

Oldenburg is thus placed as an intermediary between talent, thought and controversy. These edited volumes take Oldenburg as subject; however, the letters are by and large related to Oldenburg's active involvement as Secretary and, consequently, provide a backdrop to the philosophic and administrative life *of the Royal Society* during his tenure. This can hardly be considered solely a result of the frame of reference since it is obviously the exigencies of surviving materials that create this focus; nonetheless, the contribution of these unavoidable factors to the trend that frames Oldenburg via the Royal Society remains predominant.

Naturally, commentaries on the edited *Correspondence* also take up a biographical focus. John Henry's "The Origins of Modern Science: Henry Oldenburg's Contribution" and Stephen Shapin's "O Henry" fall into this category.[72] Both develop into biographical essays in their own right within the context of reviewing Hall and Hall's edited *Correspondence*. What is more, as a vindication of the text, Shapin goes so far as to note "it would be quite inconceivable for any historian to write about the intellectual history of the seventeenth-century, in whatever country, in whatever subject, from whatever methodological perspective, without at least familiarising himself with the *Correspondence*."[73]

Less biographical yet still loosely subject-oriented works approach Oldenburg by exclusively focussing on his position and role within the conceptual frame of the Royal Society. I take five authors as indicative of the general direction of scholarship here, ranging from Iliffe's examination of Oldenburg's varying roles centred on the publication of the *Philosophical Transactions*, Pumfrey's study of the relationship between figures in the early Royal Society, through to Kronick's consideration of the production of the *Philosophical Transactions.* Robert Iliffe's "Author-mongering: The "editor" between producer and consumer" addresses whether or not Oldenburg, as Secretary and warden of the *Transactions*, was properly-speaking an 'editor' by virtue of assuming contemporary editor-like functions, or conversely, if his labours fit more in line with our notion of him being an author of the texts he translated.[74] Similarly, and in a complementary manner, Pumfrey queries role development through institutionalized practices[75] and the public designations of experimenters involved in the Royal Society with regard to their credibility as natural philosophers.[76] Both, importantly, discuss quasi-professional designations for figures who were, in their time, without such designations. Moreover, by necessity, this involves locating all such discussions in relation to the Royal Society and other professional institutions.

---

[72] John Henry, 'The Origins of Modern Science: Henry Oldenburg's Contribution,' *British Journal for the History of Science* 21 (1988): 103-
110; Steven Shapin, 'O Henry,' *Isis*, Vol. 78 (Sep., 1987): 417-424. See also Quentin Skinner, "Science and Society in Restoration England," *The Historical Journal* 10, no 2 (1967): 286-93; and Christopher Hill, "The Correspondence of Henry Oldenburg," *The English Historical Review* 91, no. 360 (1976): 645-46.
[73] Shapin, 'O Henry,' 417.

David A. Kronick further develops this discussion of professional designations and roles by focussing on the *Transactions*' early printing history, its relationship with the Royal Society, distribution, editorial policies and procedures, which centrally places Oldenburg as beginning the periodical, and in particular highlights his role in the evolution of the scientific journal's central position to this day as a medium of communication.[77] Given his attention to the development of the periodical, his concern is again akin to the institutional framework seen in the previous authors.

---

[74] Robert Iliffe, 'Author-mongering: The "editor" between producer and consumer,' in *The Consumption of Culture, 1600-1800: Image, Object, Text*, eds. Ann Bermingham and John Brewer. (London: Routledge, 1997): 167-192.

[75] Stephen Pumfrey, 'Ideas above his Station: A Social Study of Hooke's Curatorship of Experiments,' *History of Science*, Vol. 29 (1991): 6.

[76] Stephen Pumfrey, 'Who did the work? Experimental philosophers and public demonstrators in Augustan England,'*British Journal for the History of Science*, Vol. 28 (1995): 155.

[77] David A. Kronick, 'Notes on the Printing History of the Early Royal *Philosophical Transactions*,' *Libraries and Culture*, Vol. 5 (1990): 243.

Linking Oldenburg's role in producing the *Transactions* as examined by Iliffe and Pumfrey with Kronick's focus on the production of print materials for the communication of scientific knowledge, Noel Malcolm and Adrian Johns develop the quasi-subject oriented approach to Oldenburg. They examine the general importance of written materials to this milieu.[78] Related to publication, albeit indirectly (though directly tied to print communication), is Malcolm's study of Oldenburg's library.[79] This work, in particular, is a bibliographic signpost: a catalogue of the development of Oldenburg's intellectual home environment, including many of the works of his contemporaries and those in his intimate milieu: e.g. Robert Boyle, with no less than nineteen of his catalogued references.[80] This catalogue was compiled to itemize a donation of books from Oldenburg to the Royal Society when proposals were discussed and brought forward by Society members for a new building for the Society. Again, tellingly, this gives us a view of Oldenburg, but seen only in relation to his affiliation with the Society and his work for it. Malcolm allows us to consider Oldenburg's reading habits, whereas Johns directly leads to this consideration, arguing for the importance of print communication via periodicals in the development of natural philosophic knowledge.[81] Naturally, no study of the scientific periodical could consider its development without taking up Oldenburg's production of the *Philosophical Transactions* and his development of private correspondences into public information via communication as licensed knowledge in the periodical. Johns' specific focus is on the taken for granted element of a journal's licensing of knowledge through distribution and print production in an institutional body, and by exploring the methods through which this was accomplished in the early publication years of the *Transactions.*

---

[78] For other works in this area, please see Peter Dear, 'Narratives, Anecdotes, and Experiments: Turning Experience into Science in the Seventeenth Century,' In *The Literary Structure of Scientific Argument*, ed. Peter Dear (Philadelphia: University of Pennsylvania Press, 1991), 135-63; and also Frederic L. Holmes, 'Argument and Narrative in Scientific Writing,' In *The Literary Structure of Scientific Argument*, ed. Peter Dear (Philadelphia: University of Pennsylvania Press, 1991), 164-81.

79 Malcolm, 'The Library of Henry Oldenburg,' 1-54. This catalogue of books was evinced in way of a donation from Oldenburg to the Society when proposals were discussed and brought forward for a new building.

[80] *Ibid.* For a brief review of Boyle in this milieu, see Michael Hunter, 'Boyle, Robert (1627-1691),' *ONDB* (Oxford University Press, 2004), http://www.oxforddnb.com.login.ezproxy.library.ualberta.ca/view/article/3137. (accessed 18 Aug. 2005).

[81] See Adrian Johns, 'Miscellaneous method: authors, societies and journals in early modern England,' *British Journal for the History of Science*, 33, 2000, 159-186.

These five authors' works, while diverse, are illustrative of the direction taken in the more broadly conceived subject-oriented works, such that Oldenburg's activities, role, output, and relations are examined only within the conceptual frame of the Royal Society, which necessarily limits the scope of their discussion. This demonstrates the taken for granted notion of Oldenburg as a near-object of the Royal Society.

* * *

The historiographical approaches to Oldenburg are more expressly dedicated to conceiving him as an object of the Royal Society, rather than an ostensive subject apart from this institutional frame. These historiographical approaches are, in turn, predominantly divided between the "old" histories of the Royal Society that record the daily activities of the Society as an institution as opposed to "new" histories that tend to incorporate its social history and institutionalising force. In the former, Oldenburg appears only insofar as either record books mark his activities or these texts explain the natural philosophy of the men he worked with. In the latter group, Oldenburg figures as a highly important individual, but more so conceptually as a highly driven Secretary who was buttressed by other virtuosi, presidents, ideas, movements, and so forth. The commonality for both is their integration of Oldenburg only within the institutional frame, hence placing him as object to the Society.

"Old" histories of the Royal Society begin with Thomas Sprat's *History of the Royal Society of London* in 1667—Sprat was asked to write this first work as a defense of the Society's new natural and experimental philosophy.[82] Thomas Birch followed, writing in the 18th century, *History of the Royal Society for Improving Natural Knowledge from Its First Rise.* This work is the quintessential logbook of Society activities, wherein Oldenburg figures exclusively through his output on behalf of the Society.[83] Moreover, the registers that comprise the book during Oldenburg's life are Oldenburg's own records, collected as part of the duties of his Secretaryship, duties he defined and modeled.[84] These texts set the foundation for later investigations by providing much of the primary materials from which later examinations develop.

In turn, 20th and 21st century scholars who have taken up Oldenburg as an object of the Royal Society tend to expand on the origins and nature of, as well as the reactions to, the Society; however, they offer less intervening discussion of Oldenburg. Conceptually, these works are also descriptive of the Royal Society, as with the "old," although they tend to address the usefulness of the Society via its aim to promote experimental learning, often concentrating on the utility and meaning of science as it was fashioned by its members. That is, they describe the life of the Society, but they focus less on the total framework within which Oldenburg as subject was able to contribute, via his outputs, to the Royal Society. This is to say, by locating Oldenburg within the scope of the

---

[82] Sprat, *History.*

[83] Birch, *History*, Vols. 1-1V.

[84] Other authors in this tradition include C. R. Weld, *A History of the Royal Society with Memoirs of the Presidents*, 2 vols. (London: n.p., 1848); Sir Henry Lyons, *The Royal Society, 1660-1940. A History of its Administration under its Charters* (Cambridge University Press, 1944); and also Sir William Huggins, *The Royal Society or, Science in the State and in the Schools* (London: Methuen, 1906).

Society, these texts tend to place less value on those associations, experiences, and developments that made the Society's Secretary so well-suited to create his own role.

In this vein, R. H. Syfret discusses the reasons for the Society's inception, breaking away from "old" histories by examining the Comenian connection (i.e.: The Invisible College) as well as the reaction of the Baconian method of experimental learning vis-à-vis Sprat's account.[85] K. Theodore Hoppen's "The Nature of the Early Royal Society" (Parts I & II) surveys the attitudes toward the early institution and how it became institutionalized, as well as exploring who the chief instigators of this project were.[86] In particular, and illustrative of the tone of this scholarship, Hoppen argues:

> Any institution that is acting as a filter through which great conceptual changes are being absorbed into the general world of intelligent men is, given its situation in an environment of conflicting opinions and philosophies, bound to reflect the intellectual contradictions (or what seem to us contradictions) and distinctions of its time.... It is also important to reach some understanding of the nature of the contemporary self-image of natural philosophy.[87]

This focus on how the Royal Society shaped itself is reflected in several works, perhaps most notably Margery Purver's *The Royal Society: Concept and Creation*, which discusses the validity of Sprat's account as well as the religious policies and systems of natural philosophy espoused within the Society.[88]

The natural byproduct of these early historical examinations of the Society's origins and early milieu is an institutional focus. Michael Hunter, a Robert Boyle scholar, has written about the Society having a 'corporate personality,' in his *Establishing the New Science: The Experience of the Early Royal Society*, and he also takes up the importance of being institutionalised.[89] This thread is further developed in his 'First Steps in Institutionalization: The Role of the Royal Society of London,'[90] such that he argues the Society's focus was on setting up a formal structure for the elaboration and proliferation of science and learning—naturally, this institutional framework is something independent of, though deeply tied to, the Society's natural philosophical mandate (e.g., their motto: '*nullius in verba*'). Moreover, this institutional focus lessens the value placed on the Oldenburg as *individual*, instead making him a figure within the institutional mechanism.

---

[85] R. H. Syfret, 'The Origins of the Royal Society,' *Notes and Records of the Royal Society of London*, Vol. 5, No. 2 (Apr., 1948), 75-137; see also Syfret's 'Some Early Reactions to the Royal Society,' *Notes and Records of the Royal Society of London*, Vol. 7, No. 2 (Apr., 1950). 207-258. Also, see Douglas McKie, 'Origins and Foundation of the Royal Society of London,' *Notes and Records* 15 (1960): 1-37.

[86] K. Theodore Hoppen, 'The Nature of the Early Royal Society,' Parts I & II, *The British Journal for the History of Science*, Vol. 9, Nos. 31 & 33, 1976, pp. 1-24; 243-273. Also see P. M. Rattansi, 'The Intellectual Origins of the Royal Society,' In *Essays on Early modern Philosophers from Descartes and Hobbest to Newton and Leibniz*, ed. Vere Chappell (New York: Chappell Hill, 1992), 49-64.

[87] Hoppen, Part I, 19.

[88] Margery Purver, *The Royal Society: Concept and Creation* (London: Routledge, 1967).

The next approach to Oldenburg is what I will call 'relational.' This is to say, Oldenburg is approached as a figure who is affiliated with another under discussion by virtue of the work he performed in the Society, such as translating Boyle's works into Latin and seeing to their publication. This overlaps with those who do social histories of the Royal Society and its Fellows, insofar as they seek out overlapping networks of individuals.[91] They relate Oldenburg to others based on his achievements. Authors in this genre characteristically retrace the interconnections between other men and Oldenburg in the areas of letter-writing, experimentation and the like. This ties him to Samuel Hartlib, Thomas Hobbes, and the ways these men connected scientific activities to what Stimson calls "the amateurs in England and those on the continent."[92] These relational authors also highlight the intellectual virtuosi Oldenburg worked for, in particular Robert Boyle, but their general trend is to approach Oldenburg by virtue of another's manners, patronage, knowledge or authority.[93]

---

[89] Michael Hunter, *Establishing the New Science: The Experience of the Early Royal Society* (Woodbridge, The Boydell Press: 1989), see pp. 1-27 for a discussion on the importance of being institutionalised, and that the Society, writes hunter had a 'corporate personality,' p. 3.

[90] Michael Hunter, 'First Steps in Institutionalization: The Role of the Royal Society of London,' in *Solomon's House Revisited: The Organization and Institutionalization of Science*, ed. Tore Frängsmyr (USA, Science History Publications: 1990), 13-30; see also Hunter's, 'Reconstructing Restoration Science: Problems and Pitfalls in Institutional History,' *Social Studies of Science*, Vol. 12, No. 13 (Aug., 1982), 451-466.

[91] See, for example, Michael Hunter's *The Royal Society and Its Fellows, 1660-1700: the morphology of an early scientific institution* (British Society for the History of Science: 1982), which offers a social historical explanation of the rosters of the Society's fellows, including the process of election, admission, proposing, and accounts, to name a few, by examining this way the Society's composition and early nature.

Perhaps the broadest approach that places Oldenburg as an object to the Royal Society is that seen in works that discuss the trends in the scientific revolution, science in society and the nature of natural philosophy in general in the 17th century. As part of their scope, these studies include more thematic approaches to reading the *era* in which Oldenburg thrived. For example, they explore the growth of an empirical method in natural and experimental philosophy as well as its impact on 17th century science as an important frame of reference for historians. John Henry's *The Scientific Revolution and the Origins of Modern Science*, Michael Hunter's *Science and Society in Restoration England*, and Steven Shapin's *The Scientific Revolution* are the quintessential examples of studies that place the Royal Society in its intellectual, social and cultural milieu.[94] Furthermore, Charles Webster's *The Great Instauration: Science, Medicine and Reform, 1626-1660* takes on a greater range in order to discuss the learning traditions that both affected and bonded the members of the Society, e.g. Baconian ideals.[95] He further develops this in his introduction to *The Intellectual Revolution of the Seventeenth Century*, where he specifically espouses a history of science in the 17th century that conceives of science as integrally related to a range of developments.[96] Webster's work, in this way, cultivates an intellectual background for the historian to reflect on the beliefs—social and religious—of Oldenburg's correspondents. All of these broad approaches provide a focus wherein to frame Oldenburg's outputs vis-à-vis the movements of contemporary science. Oldenburg, as subject, is only briefly considered in these works and becomes a footnote to his own productions.

---

[92] Dorothy Stimson, 'Haak, Hartlib, and Oldenburg: Intelligencers,' *Isis*, Vol. 31, No. 2 (Apr., 1940), 311-312. See also Quentin Skinner, 'Thomas Hobbes and His Disciples in France and England,' *Comparative Studies in Society and History*, Vol. 8, No. 2 (Jan., 1966), 153-167.

[93] See, for instance, Michael Hunter, 'The Publication of Boyle's Works: Editors, Booksellers and Printers,' in *The Works of Robert Boyle*, eds. Michael Hunter and Edward B. Davis, Vol. I (London, Pickering and Chatto: 1999), xlvii, where Oldenburg is represented as assisting Boyle's work. See also Hunter's *Robert Boyle (1627-91): Scrupulosity and Science* (Woodbridge, The Boydell Press: 2000), 240-241, where Hunter refers to Oldenburg as being a "publicist" for Boyle's image. As well, see Marie Boas Hall's *Robert Boyle and Seventeenth Century Chemistry* (Cambridge University Press: 1958), 47, for a discussion on Oldenburg's 'informer' role of scientific news when Boyle resided primarily in Oxford. Also, see Steven Shapin, 'Pump and Circumstance: Robert Boyle's Literary Technology," *Social Studies of Science* 14, no. 4 (1984): 481-520.

[94] See John Henry, *The Scientific Revolution and the Origins of Modern Science* (Palgrave: 2002); Michael Hunter, *Science and Society in Restoration England* (Cambridge University Press: 1981), where he discusses the significance of the Royal Society, pp. 32-28, in particular; and Steven Shapin, *The Scientific Revolution* (Chicago: Chicago University Press, 1996).

A further group among those who take Oldenburg up as an object compare his editing and publication work in the *Transactions* with that of the French Academy in Paris.[97] The latter's *Journal des Sçavans* was first published but three months prior to the first copy of Oldenburg's *Transactions*. For this reason, and because both journals were set up to record natural and experimental philosophy in order for it to then be circulated, those who compare the *Transactions* with the *Journal des Sçavans* devotes itself to the discussion of the Royal Society as a scientific institution and community. The comparative studies completed in this way predominately configure Oldenburg in relation to Marin Mersenne, who was Oldenburg's earlier counterpart in scientific communication on the continent.[98]

---

[95] See Charles Webster, *The Great Instauration: Science, Medicine and Reform, 1626-1660* (New York, Holmes & Meier, 1975).

[96] Charles Webster, 'Introduction,' in *The Intellectual Revolution of the Seventeenth Century*, ed. Charles Webster (London, Routledge: 1974), 12.

[97] See Martha Ornstein, *The Role of the Scientific Society in the Seventeenth Century* (University of Chicago Press: 1928), especially pages 91-138. See also Harcourt Brown, *Scientific Organizations in Seventeenth Century France (1620-1680)* (New York, Russell & Russell: 1967); pages 91-134 concentrate on the Montmor Academy and England, including the exchanging of ideas and the relationships between the two.

[98] See reference for Ornstein above for more discussion. See also A. C. Crombie, 'Mersenne, Marin,' *Dictionary of Scientific Biography*, pp. 316-322 for his biographical entry in the *DSB*. As well, Peter Dear's *Mersenne and the Learning of the Schools* (Cornell University Press: 1988); this monograph deals with the correlations of Mersenne's work with his contemporaries, which provides an intellectual backdrop for

A parallel institutional framework and its developments thus further frame Oldenburg's output with regard to the Royal Society.

In this way, the features of both the 'new' and the 'old' historiographies of the Royal Society tend to blur, rather than make distinct, Oldenburg's achievements as Secretary, though virtually all these works reference Oldenburg primarily via his Secretaryship. As a result, they tend to discuss him through his social and scientific embeddedness and his indirect involvement and/or association with other members. However, there is one final grouping of materials that deserves attention: Oldenburg's own *Philosophical Transactions* and the scholarship that it has generated. The *Transactions,* in their own right, are a historiographical and journalistic reportage of natural philosophic communication. Rhetoric, the construction of authority, truth-telling, honour and experimental life were a par of the *Transactions*, at first only through Oldenburg, and have been taken up by scholars who examine only Oldenburg's compendium.[99] Those who examine the *Transactions* across time but beginning with Oldenburg, include Dwight Atkinson and Bryce Allen, to name only two examples.[100] As well, some who consider the

---

Oldenburg's French engagements when he was travelling as a tutor in France, and becoming involved in French scientific circles.

[99] See Peter Dear, '*Totius in verba*: Rhetoric and Authority in the Early Royal Society,' *Isis*, 76, 1985, 145-161, for a discussion on cooperation. See also Steven Shapin, *A Social History of Truth: Civility and Science in Seventeenth-Century England* (Chicago: University of Chicago Press, 1994). See also Adrian Johns, 'Reading and Experiment in the early Royal Society,' in *The Nature of the Book: Print and Knowledge in the Making* (Chicago, University of Chicago Press, 1998), 244-76. Here, Johns means the circulation of natural philosophy requires also a correlative approach into understanding the rhetoric of knowledge, e.g. dynamics of writing, circulation and reading, which characterised early modern natural philosophy. See also Johns' 'Physiology of Reading in Restoration England,' in *The Practice and Representation of Reading in England*, eds. Raven, Small & Tadmor (Cambridge University Press, 1996), 138-161, for his discussion on Robert Boyle's literate practice and the processes of perception in reading by a natural philosopher in Restoration science, which has a composite effect on the nature of the experiment described.

[100] Bryce Allen, et al, 'Persuasive Communities: A Longitudinal Analysis of References in the Philosophical Transactions of the Royal Society, 1665-1990, *Social Studies of Science*, Vol. 24, No. 2 (May, 1994), 279-310, which discusses the influence and referencing of other societies and correspondences throughout the *Transactions*' history; for an even greater breadth of a similar kind of study, see Dwight Atkinson, *Scientific*

prose style of the Royal Society and its discursive techniques across time include Ellen Valle and Brian Vickers.[101] Others scholars address the nature, birth and early communication work of the journal.[102] Oldenburg is often seen as promoting the new science through his contacts abroad and in England, which supports the argument that the *Transactions* was a medium for not only disseminating natural philosophical knowledge and experimentation but also the Royal Society's corporate identity and institutional status.[103]

The point here is that this is still an indirect view of Oldenburg—we only see him askance because this is not Oldenburg himself but rather his output, dissemination, or his exercising of an editor-like function.

ASSUMPTIONS AND EXPECTATIONS

The binding force behind all of these ways of categorising the literature on Oldenburg and his milieu is their difficulty in ascribing a clear role to Oldenburg and hence the persistent tendency to see him primarily through his outputs and productions within the Royal Society. What is lost is Oldenburg as subject. Also, the relationship between this subject and his institutional position, editor-like function, production of materials, and general

---

Discourse in Sociohistorical Context: The Philosophical Transactions of the Royal Society of London, 1675-1975 (New Jersey, Lawrence Erlbaum: 1999).

[101] Brian Vickers, "The Royal Society and English Prose Style: A Reassessment," In *The Royal Society and English Prose Style: A Reassessment*, edited by Brian Vickers and Nancy S. Streuver (University of California Press: 1985), 3-76. Also see Ellen Valle's "A Scientific Community and Its Texts: A Historical Discourse Study," In *The Construction of Professional Discourse*, eds. Linell, Funnarson & Nordberg (London, Longman: 1997), 76-98.

[102] See, for instance, Harcourt Brown, 'History and the Learned Journal,' *Journal of the History of Ideas* 33 (1972): 365-78; and A. N. da C. Andrade, 'The Birth and Early Days of the Philosophical Transactions,' *Notes And Records* 20 (1965): 9-27.

[103] See Michael Hunter, 'Promoting the New Science: Henry Oldenburg and the Early Royal Society,' *History of Science*, 26 (1988), 165-181. See also Marie Boas Hall, *Promoting Experimental Learning: Experiment and the Royal Society, 1660-1727* (Cambridge University Press, 1991), especially see Chapter 4, 'The communication of experiment, 1660-1677,' which covers Oldenburg's years with the Society and the translation and journal enterprises he undertook.

catalytic prompting of Society activity via correspondence and reportage is not something that should be lost. While, granted, it is viable to disregard that which led Oldenburg to his position(s) and prolific output *if* one is primarily interested in the philosophical life of the Society, this rationale does not resolve the discrepancy between the complex importance of Oldenburg's position (and role) and the scarcity of scholarly inquiries into how his role and ability to fill it developed. Both specific and general scholarship commonly writes *around* Oldenburg, adumbrating his praxis to the scientific or institutional significance of others rather than what circumstances and precursor stages led him to these interactions.

Perhaps the most compelling example of this is scholarship's tendency to take up Oldenburg *in medias res* in his editor-like function. This is to say, Oldenburg's 'editing' work is of interest only with regard to the Royal Society, and hence the complexity of Oldenburg's function and definition is inconsequential when he is taken up as object to the Royal Society itself. It is only Oldenburg as subject who prompts examination of the development of his editor-like function. For instance, a standard convention among editors then and now is that their craft is exercised in the realm of communication. Constructing a functional definition of an editor thereby begins and ends with the practice of communication; however, if the focus is only on the communication itself and not the system by which it becomes possible and credible, then Oldenburg remains the object and further exploration is unnecessary. Nevertheless, the basis for such communication is the assumption of truth and good-faith, yet in advancing a scientific method, what is regarded as a "truth" can change while the basic social and "professional" tenets do not, especially in order for provisional truths to be deemed credible. Hence, Oldenburg as subject becomes a necessary feature of the taken-for-granted *basis* for objective service to the Royal Society and his outputs for it: his editor-like-function is based on his development and the earlier stages of his life, without which he would not have the social credit to take up the position of mediator of truth and "good steward of manuscript submissions."[104]

The editor is also, by definition, the figure who stands between author and printer. Whether this person selects material, sees to its revision or translation, or is simply the vehicle by which it moves to print, he is fulfilling the role of an editor, or at least what we would call an 'editor' in our modern-day parlance. Editors, now, are also characterised as scholars, salespersons, press and author advocates, readers, optimists, "success realists," and importantly both "detail wizards" and "joy mongers."[105] In the early modern literature, however, where we lack a precise role and definition for an editor, there is still a transition point that begins with Oldenburg, where we begin to see the formation of an institutionalised role that must moderate between author and distribution. Kronick discusses this situation and argues that

> [t]he roles of the editor, publisher, and printer in seventeenth-century periodicals were not clearly differentiated. Theoretically these functions are divided among an editor who acquires and prepares copy for a publisher who arranges for printing and distribution and a printer who is responsible for producing the final product. In the period we are discussing, printing, publishing, and distribution (bookselling) could all be carried out by a single firm, by two firms in combination, by three different firms, or by all possible combinations and permutations of partnerships. Oldenburg refers to… the *Transactions* [as] "edited and published by me alone."[106]

---

[104] See Charles C. Fischer, "Editor as Good Steward of Manuscript Submissions: 'Culture,' Tone, and Procedures" *Journal of Scholarly Publishing* 36 (2004): 34-42, for a discussion of the issue of fair treatment of authors' manuscripts submitted to academic journals, which examines how reputations of author, editor and journal are managed. Also see Gail E. Hawisher and Cynthia L. Selfe, "On Editing and Contributing to a Field: The Everyday Work of Editors," *Pedagogy: Critical Approaches to Teaching Literature, Language, Composition, and Culture* 4, no. 1 (2004): 9-26.

[105] Bill Harnum, 'The Characteristics of the Ideal Acquisition Editor,' *Journal of Scholarly Publishing* 32, no. 4 (2001): 184-8.

[106] Kronick, 246-247. Oldenburg's words are taken from the Advertisement to the Reader in Issue 12 of the *Transactions*, *Ibid.*

Henry Oldenburg was editor of the first 11 volumes of the *Transactions* beginning in 1665; afterwards, he was joined by Nehemiah Grew for the 12th and final volume in Oldenburg's life.[107] In fact, it would be customary for quite some time to have *one* person accommodating communication of the publication of the *Transactions*, alongside the editor-like role, at least until the 47th volume when the responsibility for the *Transactions* was assigned to a committee.[108]

Because of these factors, there are a range of scholars who either refer to Oldenburg as an editor or instead bestow editor-like functions on him. The former include Noel Malcolm, David A. Kronick, who also ascribes a category of "editors" for the *Transactions'* early volumes, and Robert Iliffe.[109] Iliffe notes that "[t]he roles and functions of those individuals designated by their contemporaries as 'editors' were connected by virtue of their ability to make 'names' for their authors and construct public 'identities' for them."[110] It was by the eighteenth century, Iliffe also notes, that "editorial techniques and strategies, allied to a skilful manipulation of the market, endowed certain texts with an authoritative status."[111] In addition, we also have Oldenburg's *own* self-description of his role and attachment to the journal, as Kronick cites above: "edited and published by me alone." Nonetheless, we lack precise role definitions for Oldenburg's activities, although we can ascribe to him the editor functions we commonly know. Also, we know of editors today that one does not come into this role fully formed. There is almost always a background of expertise that enables the dissemination of a particular knowledge[112] and the credit granted to this knowledge via its disseminator—but how well prepared a person is for this role (even if indirectly trained) affects the success of communication.

---

[107] *Ibid.*, 259.
[108] *Ibid.*, 259. Other "editors" Kronick notes included Robert Plot (1682/83-1684), William Musgrave (1684-1685), Edmond Halley (1686-1687 & 1714-1719), Richard Waller (1691-1694), Hans Sloane (1695-1713), James Jurin (1720-1727), William Rutty (1727-1728) and Cromwell Mortimer (1729-1750).
[109] Malcolm, 1; Kronick, 246-7 & 259; Iliffe, 167.
[110] Iliffe, 168. See also Shapin's 'Pump and Circumstance' for a discussion on the public constitution of space that members, such as Boyle, were working towards, 508.
[111] *Ibid*, 168.

There is another taken-for-granted factor in the editor-like function. No one would make the transition from hand-written correspondence to a distributed, print-run periodical without first going through the necessary passage point: Henry Oldenburg. If we accept this as a starting point, the need for assent (or dissent) to the title of "editor" dissolves. Making this transition *is* what an editor does by definition. This transformation from single letter to multiple print copies has a profound effect on the bias of communication:[113] what is deemed communicable, who it can be communicated to, the limitations of time in its distribution, the ephemerality of the contents, and the credibility of the materials. All of this further emphasises the importance for understanding Henry Oldenburg's precursor stages to his editor-like function for the Royal Society.

Insofar as existing scholarship takes up this editor-function *in media res*, the composite portrait of Henry Oldenburg is framed by the need for his role within the Society, both for its aims and members, rather than holistically by exploring how he acquired the social credit prerequisite to filling this need. The ends of this Society-oriented portrait, though valuable to their own goals and the current debates of history of science scholarship, therefore inevitably cast Oldenburg as a rather two-dimensional character: a man who performed labours exceptionally well for many people but, nevertheless, who laboured expressly for the ends of an influential Society and its scientific administration. Is it possible to re-cast the portrait of Oldenburg and intervene in this group of studies that compares his significance and usefulness to many others?

---

[112] See, for example, Iordan Avramov, 'An Apprenticeship in Scientific Communication: The Early Correspondence of Henry Oldenburg (1656-63),' *NOTES AND RECORDS* 5, no. 2 (1999): 187-201.

[113] Harold Innis details the relationship credit and communication have with the medium of distribution in *The Bias of Communication* (University of Toronto Press, 1951). See pp. 55-57 for his discussion of the Royal Society and the transformations in English print production in this period.

A problem with the existing literature on the Royal Society, reaching across several genres, is that Oldenburg's role and adeptness appear in most of the literature automatically prefigured: both generic in placement and advancement. With Henry Oldenburg, there is an unprecedented role and function, an execution of duties in publishing, editing and networking through correspondence that was considerable and indispensable for natural philosophic talent to make the transition from private to public life (as well as into the print documents that remain distributed broadly today, still held in modern libraries and widely available through electronic databases). Oldenburg's life, more particularly, his own biography prior to the Royal Society, is therefore unique and, perhaps, requires a holistic retelling. Moreover, a concentrated examination of Oldenburg requires a critique of the range and timeframe that biographies and historiographies often cover. This critique is not done in order to devalue the available literature, but, rather, to expand the breadth and focus given to Oldenburg's life prior to the Royal Society and to elaborate on the moments where previous literature does engage in this enterprise, most notably the Halls' *Correspondence* and Marie Boas Hall's biography of Oldenburg. In other words, is it possible to speak of a highly skilled and trained role *prior* to the Royal Society for Oldenburg? What roles and experiences stand as precursors to editor-like work in Oldenburg's life? As the literature stands now, available biographies on Oldenburg are already few; there are still fewer, even in institutional approaches or histories of the Royal Society, that tackle Oldenburg's selfhood and identity in the environment of letters and his communication of the natural philosophy periphery to the mainstream of the Royal Society. The skills and competencies—particularly his translation work and capacity to accommodate the scope of various forms of learning, experimentation and discourse—are testament to earlier engagements with scientific inquiry and political life. By the restoration of the monarchy in 1660, Oldenburg already had his own network of correspondents on the continent and in England. He was, by then, a translator, highly prolific correspondent, tutor, and someone who possessed his own natural sense of curiosity, enough to engage in natural philosophy in France and situate himself uniquely, in the process, in a learning environment that would be of great use for the development and establishment of the Royal Society: the French Académie.

The implications for the study of the nature of scientific communities, their construction and also *de*construction of labour involvement are worthy of note. For instance, in the case of Oldenburg, did he perhaps act out a similar role prior to the Society? Because Oldenburg's biographers often program their studies to the Society-specific frame of reference, the portrait of Oldenburg remaining is of someone who worked for others' aims and outputs. By not engaging more directly with his earlier life, Oldenburg's activities lack a third dimension: configuration of role that incorporated skills learnt earlier into active functions used later. Critically, the existing scholarship thereby depicts Oldenburg passively: namely, primarily through socially ascribed functions. There is then a real and pressing contradiction between typical historiographical approaches and the work described in Part I of this thesis: how did Oldenburg then manage his productivity so well? Furthermore, his own existence was not just for the Society, but for himself as well. How then can we survey the range of his 'inputs' that enabled a successful phasing of outputs, as so well described by others?

Henry Oldenburg mastered editorial functions in order to survive, and, crucially, his competency in doing so adds another dimension to his otherwise acclaimed Secretarial role. Biographers of Oldenburg approach his work for the *Transactions*, its publication and his Secretarial duties as though they were necessary for his post. They were not in the early years; however, these changed and expanded as Oldenburg's praxis became more enriched and multi-layered. Further, they were required in order for the *Transactions* to transform into an organ of information dissemination for the Society. Therefore, in order to contextualise his duties with due accord to his own biography, another approach is needed that assigns his work more meaning vis-à-vis a fully-formed and highly-functional role, developed through a reading of standard socio-anthropological literature. These bodies of work enable us to see stages, meanings, and role work that we often take for granted. Ultimately, I want to ask, is it plausible to say that Oldenburg used skills he had already learned but that the historiography normally accords him only in the 1660s and 1670s when they were most prevalently used and written about?

INTERVENTION

My intervention in this body of scholarship is to sketch a biography of Henry Oldenburg that looks to when he was younger and not exclusively in England, when he was not yet affiliated with the Royal Society. I place him as subject in social space—that is, relative to his encounters and experiences prior to 1665. This is done in order to question whether his activities in those years are consistent with those of his later years when he was more than a "Secretary" for the Royal Society. This naturally raises another question: what was a Secretary in Oldenburg's time, and where do the limits of a Secretary's role stop and the editor's begin? Or are all these blurred? All of this discussion gestures towards the "input" of his role work. The definitions of editorial praxis here are important because Oldenburg's important editor-like function has been taken for granted, as is evidenced by the lack of unity in according him this specific role. Furthermore, it is assumed that these duties were necessarily attached to his Secretarial duties—yet, from his own self-definition of Secretarial work, we know differently.[114] My primary documents consist, firstly, of Oldenburg's letters in the Hall's edited *Correspondence*, and, secondly, the early *Philosophical Transactions* (1665-1667, before another editor joined). My secondary literature consists of the extant scholarship, as I have described it, but reframed to situate Oldenburg as a developing subject.

To do this, I use standard sociological and anthropological literature to explain the concepts relevant to Oldenburg's work-related activities, such as public and private order(s), credit relations, role, institutions, deference and demeanour. My objective in using these materials is to use more relevant and appropriate resources to explore the skill development and actions of Henry Oldenburg in his early years, sometimes typified as 'editorial.' In putting forward this methodology, I want to see Henry Oldenburg as *active*; that is, actively contributing to his Society years using his previous experience and connections with networks already begun on the continent and in England. I want to suggest his earlier role as developing into the one that historians of science know and perhaps take for granted.

---

[114] See Kronick, 247; and Hall, *DSB*, from British Museum MS Add 4441, fol. 27; 200-201.

III

BIOGRAPHY OF "O"

EARLY OLDENBURG

This section explores the features of Henry Oldenburg's early life, up until 1660 when he was in London and assumed a Secretary-like status to the group that was to become known as the Royal Society in 1662. I focus primarily on features that are precursors to his later adeptness in his editor-like function in the Royal Society for the *Philosophical Transactions*. Oldenburg's relevant life experiences covered here include his early life in Bremen and in England, his work as a tutor, his development of correspondence networks, his involvement in French science, and his important friendships formed prior to the Royal Society. All of these would significantly shape his development in such a way that he could occupy a much-needed role of editor and Secretary. Insofar as I trace these features, this is a standard biographical portrait, yet it includes the non-standard materials in Oldenburg's past from which his later contribution to the Royal Society are, I argue, derivative.

Born in Bremen, Germany, *c.* 1618, Heinrich Oldenburg, as he was named, was raised by a family with close ties to scholarly education, specifically in religious foundations.[115] Oldenburg's father, also forenamed Heinrich, received a degree of Master of Philosophy in 1608 from the University of Rostock and was appointed in 1610 to teach at the Pedagogium in Bremen, which was then an Evangelical school.[116] By 1633, Oldenburg senior had just been appointed to a Professorship at the new University of Dorpat (now Tartu in Estonia), founded in 1632 by the Swedish King Gustavus Adolphus, though he was to die one year following the appointment.[117] In that same year, the young Oldenburg began schooling at the Gymnasium Illustre of Bremen,[118] where his studies involved

---

[115] A. Rupert Hall, in the *DSB*, lists his birth as approximately 1618; Marie Boas Hall, however, notes that it is more likely 1619 because he recorded in 1663 on his first marriage license that he was 'aged about 43 years' (see Hall, *Shaping the Royal Society*, p. 4); still, others, such as Bluhm, refer to his birth around 1615. The date remains uncertain.

> [a] massive knowledge of godly learning, which will furnish them eternal salvation, a complete mastery of Latin, no slight practical knowledge of Greek, the rudiments of Hebrew, a sound knowledge of rhetoric and logic, after that Arithmetic, the elements of Geometry, and some music. Finally, through the study of good authors a professional knowledge and an abundance of rules for living a good life.[119]

Having received focussed theological training, as well as perhaps having been influenced by his father and others through his paternal ties to religious study, Henry Oldenburg obtained the degree of Master of Theology on 2 November 1639 for a thesis he wrote on the relations between the Church and State.[120] This fact is of central importance because the nature of this biographical sketch is to explore the dense interactions among language skills, theological pursuits, travelling, correspondence networks, and professional knowledge. Oldenburg personally added to his theological studies the importance of political and diplomatic endeavours, both through and proceeding from his thesis topic, which also relates to how he functioned as an editor in an institutional context. Thus, the interrelatedness of the years between 1639-1659, and the facilitating nature of his first professional designation of a Masters degree, provide us with insight into how he was slowly working towards endeavours that would, without foreknowledge, propel him into his institutional position. This, then, establishes a context for the later series of correspondence mechanisms Oldenburg uses to establish a public identity for himself that unifies these elements of his background.

---

[116] Bluhm, in his biographical article on Oldenburg, mentions that the earliest member of the family of whom there is any certain knowledge is Johann Oldenburg, who came to Bremen from Münster in 1528 to take the position as Rector of the then newly-established Evangelical school, 182.

[117] Hall, *Shaping the Royal Society*, 4.

[118] We are also aware of his continued connection to associates from these school years, as evidenced in his letter to Hartlib of 16 July 1659: "The Dutch resident at Constantinople, Warnerus, hath been my schoolefellow at Bremen, a great lover and student of ye orientall tongues, where he may profit much to ye advantage of yt kind of learning", *Correspondence*, i, 281.

[119] *Festschrift zur Vierhundertjahrfeier des Alten Gymnasiums zu Bremen, 1528-1928* (Bremen [1928?]), 21, as cited in Hall & Hall, 'Introduction,' *Correspondence*, I, xxx-xxxi; see also *DSB*, 200.

[120] Oldenburg's thesis was entitled "The ecclesiastical ministry and the political magistry," and was performed under the presidency of the Rector, Ludwig Crocius, and the then Professor of Theology, Conrad Bergius, Hall and Hall, 'Introduction,' *Correspondence*, I, xxxi.

At first glance, the intervening years of Oldenburg's life (from the conferral of his degree to his integration into the nascent Royal Society in 1660) appear unknown, for the historical record deprives us of precise documentation of his specific whereabouts and engagements. It has been conjectured by Bluhm that he served as a tutor in many aristocratic circles in this "empty"[121] period, because evidence from his personal correspondence reveals that he was at least travelling and engaged in tutoring young noblemen.[122] On 6 August 1641, he wrote

> Hence I shall solicit some position instructing either the son of a nobleman or the son of some honest merchant—one or the other—with whom it would be possible to set out in turn for foreign parts, in order to know the condition of church and state in England, France and Italy.[123]

In the above letter—the only known letter to date that indicates the outlines of the early elements of Oldenburg's career—he expresses his poverty and beseeches Gerard John Vossius (1577-1649), Professor of History in Amsterdam, to respond with haste to help

---

[121] Bluhm, 183.

[122] The *Correspondence*'s first volume is the obvious place where there should be many letters written to young Englishmen in the 1650s, since it spans the years 1641-1662), but there are few surviving in this collection. M.B. Hall has also drawn attention to a letter Oldenburg wrote in 1667 with regard to the "faithful and laborious service" he had done for both England and for several young English noblemen, presumably in reference to an earlier time period in his life (*Correspondence*, iii, 449. Oldenburg to Seth Ward, 15 July 1667).

[123] *Correspondence*, i, 1. Oldenburg to Gerard John Vossius, 16 August 1641.

Oldenburg "entertain the hope of obtaining such a position" from Utrecht, and also to help him pursue studies to further his theological training and interest.[124]

It is possible, then, that Oldenburg, from this early time, attempted to secure work within the city of Bremen but perhaps could not avail himself of a vacant position and therefore left for Utrecht.[125] Thus, from this point, it is speculative, though probable, that Oldenburg received promising correspondence back from Vossius and secured for himself a position tutoring and travelling because shortly after his return to Bremen, he became tutor to the son of Lord Ranelagh's son, Richard Jones[126]—Lord Ranelagh, Arthur Jones, was married to Lady Ranelagh, Katherine Jones *née* Boyle, sister to Robert Boyle.

Oldenburg's letter of introduction came from the Rector, Crocius, who had overseen his Masters dissertation and advised Vossius to appeal to Oldenburg's knowledge of the theological disputes that were then troubling Bremen.[127] There is also evidence, drawn from Oldenburg's careful worded correspondence in 1654, that he was likely a tutor to Robert Honyrood, related to Sir Robert Honyrood (1601-86), a minor politician and translator living in both Kent and Essex. Oldenburg writes to Robert "I greatly rejoice that you remain constant in your zeal for study and virtue and that you have in no way transgressed the bounds of propriety…" and rather affectionately signs the letter of "Your HO."[128] That he was engaging as a tutor helps to establish a context for Oldenburg's apparent readiness to travel and educate not just others but also himself. He did so in other languages and cultures, and on topics pertaining to his thesis topic, thereby cultivating private interactions and correspondences that would prepare him for presenting a public face when he returned to Bremen. It also demonstrates his deferential reliance on others for employment, which Oldenburg exhibited in the beginning stages of his correspondence. In addition, it points out that Oldenburg's travels as a tutor placed him in opportune cultural settings wherein he could acquire new languages—English, French, and Italian added to his fluency in German and Latin (and his "no slight practical knowledge of Greek"). For instance, his prior knowledge of Latin and German would have been insufficient for his having been a tutor for an English family—he would have needed French and English for this work, and while the record is scarce, his skills in the following years demonstrate that he was in a position to have learned these languages.

---

[124] *Ibid.*

[125] Hall & Hall, 'Introduction,' *Correspondence*, i, xxxi. They conjecture about the likelihood of Oldenburg being unable to find a suitable career in Bremen at this time, following the completion of his Masters degree.

[126] Notably, C. I. McGrath, in his entry on Richard Jones in the *ONDB*, notes that the young Jones was educated in his youth by John Milton and that he spent 1657-60 travelling abroad with a tutor, but does not note that this tutor was Henry Oldenburg. See for more information, C. I. McGrath, 'Jones, Richard, earl of Ranelagh (1641-1712),' *Oxford Dictionary of National Biography* (Oxford University Press, 2004) [http://www.oxforddnd.com.login.ezproxy.library.ualberta.ca/view/article/15072, accessed 19 Aug. 2005]

[127] *Gerardi Joan. Vossii et Clarorum Virorum ad eum Epistolae*, ed. Paul Colomesius (London), 1690), Letter 313, p. 210, as cited in Hall & Hall's Introduction of the *Correspondence* (i), xxxi.

Also related to his language skills, John Milton, Latin Secretary to Oliver Cromwell, was acquainted with Oldenburg and probably met him during Oldenburg's official visit to England during 1653. The two men had corresponded, and Milton wrote Oldenburg a letter, in Latin, dated 6 July 1654 in response to prior correspondence in May and June of the same year stating

> I have more than once thought of replying to your Latin letters in English, to give you every possible opportunity of writing as well as speaking in English, as I have no doubt you can with equal accuracy. You have indeed learnt to speak our language more accurately and fluently than any other foreigner I have ever known. But I will leave it to you to do as pleases you best.[129]

---

[128] *Correspondence*, i, 26. In Latin, Oldenburg signs this "Tui H.O.", dated as early 1654/5. Oldenburg to the Senate of Bremen, 7 April 1654.

[129] *Correspondence*, i, 32-35. The letters previously sent by Oldenburg are not extant in this series of the *Correspondence*. Milton to Oldenburg, 6 July 1654.

Assuredly, this was meant as a compliment to Oldenburg's ability in translation, language acquisition and self-representation in correspondence. Moreover, Oldenburg's language acquisition permitted him to earn himself more cultural credit by being deferential in his wording and communication, which was to be a lasting theme and talent he continued throughout his corresponding life.

The lacuna in Oldenburg's correspondence ends in 1653 with a letter in his nearly native Latin to Queen Christina of Sweden. At this point, Oldenburg had returned to Bremen and was about to embark on a series of diplomatic missions as an agent of the Senate of Bremen to re-assert rights of the city of Bremen over those Sweden had usurped as a result of the Thirty Years' War. In the context of Oldenburg's life, for the twelve years of his postulated whereabouts, this letter likely appears in the midst of Oldenburg's transition from private to political life. In order for Oldenburg to have been awarded a significant diplomatic post, we may reasonably infer that his letter-writing and diplomatic abilities had already been well demonstrated on several previous occasions, or at the very least his previous activities marked him as qualified to intervene in political negotiations.

Seemingly of little matter, Oldenburg's first political appearance concerned a *Vicaria* situated in Bremen. On 9 June 1653, Oldenburg requested from Queen Christina re-possession and indicated that it once belonged to his family.[130] His father had executed a legal document shortly before he died transferring holdings of the *Vicaria* "for the benefit of the learned and promising young man Henry Oldenburg the younger."[131]

---

[130] *Correspondence*, i, 9. Oldenburg writes "Yet in truth, as I knew it was a mark of royalty to confer favours sound and entire, not spoiled nor by half-measures; as, moreover, the favour which your Majesty generously granted me in this matter was proclaimed without any mention of sharing, declaring only that I should have undisturbed possession of that *Vicaria*…so that the full usufruct and possession of the said *Vicaria* may be bestowed upon me without any interference." Oldenburg to Queen Christina, 9 June 1653.

[131] As quoted in Hall & Hall, 'Introduction', *Correspondence*, i, xxx.

Oldenburg managed to regain possession via a writ of protection of the *Vicaria* from Queen Christina only to lose it one more time when Sweden resumed its imperial possession of Bremen. In a letter dated two years later to Charles X of Sweden, this time written in German and not Latin, Oldenburg again requested possession but this time based on his hereditary right, through paternal lineage, which had evidently dated back to his grandfather's time.[132] The matter of this *Vicaria* and its continued possession persistently burdened Oldenburg throughout his life. Even towards the end, Oldenburg was still concerned that his son, Rupert, gain its holdings and was writing letters seeking to maintain familial possession of it. Though it is but one topic in Oldenburg's early life, it revealed Oldenburg's whereabouts and, as such, establishes a personal context for his habit of correspondence in the absence of other materials. It also builds from his personal life—or what can be presumed of it—and addresses a key turning point in his career involving his prior studies in 'theopolitics.'[133] The very combination of Oldenburg's anxiety for his personal holdings and his air of ease in corresponding on a more formal level acted in a sort of disunited tandem. That is, they served as a catalyst for his entrance into bureaucratic, political and scientific circles, where the last emanated from the first two. Oldenburg's scientific interactions were made possible by the communication skills prerequisite to, and perfected during, his work in bureaucratic and political affairs.

---

[132] In the letter, written some time in April, 1655, Oldenburg in a most frustrated manner writes "Although, on the strength of the documents here cited, I have been enjoying the rights and privileges of this benefice upon which no assessments whatever have been levied, I am not a little disturbed to learn that I am, against all common legal practice, to pay levy for horse service and all other assessments and that, to that end, I am to be included in the recently announced reorganisation." *Correspondence*, i, 30.

[133] The *Oxford English Dictionary (Electronic Resource)* (Alexandria, VA: Chadwyk-Healey, 2002), http://dictionary.oed.com.login.ezproxy.library.ualberta.ca/cgi/entry/50250666? (accessed 15 November 2005), refers to 'theopolitics' as "[p]olitics based on the law of God." This thesis uses the term to suggest Oldenburg's interests and skill at representation on behalf of politics, which drew necessarily on his theological education. Oldenburg's study of theopolitics indicates his familiarity with the relationship between political interactions and the learning prerequisite to theological study.

Geographically and politically, Bremen was in the midst of a series of territorial rivalries and struggles for power that Oldenburg was to find himself advantageously, if not surreptitiously, placed in the midst of. First, there was a growing tension between Bremen and Sweden, one that eventually led to Sweden's 'peaceful' First War on Bremen in 1654: a war waged more on the basis of asserting rights to imperial and dominion status than it was undertaken for blood and glory. The pressure, as it were, developed from Sweden's assumption that the Duchy of Bremen, as a State, included control over the city of Bremen, rather than only the province. Admittedly, according to the peace treaty of Westphalia in 1648, Sweden gained sovereignty over Bremen, but the town itself was to retain its town privileges, i.e. right to governance. Hence, Oldenburg's letter to Queen Christina arrived at a crucial and tense time when Bremen was on the cusp of ever-weakening negotiations with Sweden, as Bremen grew less enthusiastic about Swedish occupation and sovereignty with each year that passed. The year following this letter, the Swedish governor of Bremen, Königsmarck, matched troops to those of Bremen in order to re-assert Sweden's control, but it was a very quick war, ending with an armistice almost as soon as it was begun in September 1654, and then a peace treaty conclusion in the city of Stade on 8 November of the same year. This treaty intended for Bremen to recognise Sweden's imperial dominion over the State and for Bremen to follow Sweden in matters of foreign policy. Importantly, agreement in foreign policy was to change as a result of Bremen's confidence in Oldenburg's negotiating abilities with Oliver Cromwell of England in October of 1654, which forms the basis of Bremen's second geographical and political problem. This played out in two parts.

Bremen was placed into the midst of the first Anglo-Dutch war between England

and Holland, which broke out in 1652 and formed the second major political embroilment of Oldenburg's time. Geographically caught between the naval entourage of the Dutch and the English, Bremen's potential to lose safe and reliable passageways for its incoming and outgoing cargo was reaching a critical level. Oldenburg, presumably by this time, had some degree of close political, if not theological ties, with the Senate of Bremen, for it was one year into this war that he made his second public appearance. Also, perhaps it was an extension of the first letter to Queen Christina. On 6 June 1653, the Senate dispatched instructions—in German—for Oldenburg to request formal assurances from Oliver Cromwell that the neutrality of Bremen's shipping would be respected and that the Western port city of Bergen, in Norway, would continue to be safe-guarded.[134] Carefully stated, Oldenburg's mission was to represent Bremen's position that the opponents in this war were not the only ones to have suffered, such that the neighbouring nations received more than their share of disturbance, and for him to reclaim protection of Bremen's commerce, both locally and internationally.[135] That Oldenburg would be asked to undertake such a sensitive matter points to the growth of his political ties as well as the likelihood of his acquiring English during the gap in his extant correspondence, which further points to the likelihood of his tutoring the son of a nobleman in England, as he had sought to do in 1641.

Promoting Oldenburg's position, the Senate wrote to Oldenburg that

> [t]he commerce of our city depends upon our ships and we are afraid that these ships may, in spite of our neutrality, be captured by one or other of the belligerent parties. We therefore urgently request His Excellency, as well as the Government, to issue orders to their Admiralty, and perhaps also to their appropriate departments, clearly indicating that the ships of Bremen and their cargo are

---

[134] Hall & Hall, 'Introduction' *Correspondence*, i, xxxiii.. Norway's Bergen boasted an important trading post, selling furs and northern goods, to other Hanseatic cities, e.g. Bremen.

[135] *Correspondence*, i, 10-14. The Senate of Bremen to Oldenburg, 30 June 1653.

> assured of free passage and re-passage upon the Atlantic, the North and Baltic Seas, and elsewhere.
>
> In particular, our representative is instructed to persuade His Excellency and this Government to include the German Hanseatic factory in Bergen, Norway, in the agreement of neutrality, since the welfare of our citizens is very largely dependent upon it.[136]

Though this was the formal letter of request, the 'real' circumstance for Oldenburg's mission regarded the English capturing a ship owned by a citizen of Bremen, which contained "four tons of Nantes wine and twelve quartols of brandy wine."[137] 'Missing contents' are a problem in the correspondence as well as the shipping, and mention is made in one letter from the Senate of Bremen (15 August 1653) to Oldenburg of three letters previously directed back to Bremen during the course of his stay in England. From this letter, we know that Oldenburg was in both Dover and London. Specifically, the third letter Oldenburg wrote while in London, dated and possibly dispatched 5 August 1653, gave a "report of [his] audience with the members of the newly assembled Parliament."[138] This was the Barebones Parliament that began in July 1653 and lasted until December. Oldenburg, on 4 July 1653, was not able to receive an audience with Cromwell, a meeting that did not occur until the 29th of the same month. In particular, the *House of Commons Journal* notes that Sir Oliver Fleming Knight, Master of Ceremonies of the said occasion, was to communicate Oldenburg's active acceptance of audience.[139] His mission appeared to have had temporary success since Bremen then further appealed to Oldenburg's diplomatic adroitness to engage in a second mission and, in his capacity, request assistance from Cromwell. In addition to the terms mentioned above, this was in the hopes of staving off Swedish dominion. Though Oldenburg failed to gain assurances of support for Bremen's first request, the ambassadorial position set him up for another opportunity.

---

[136] *Ibid.*,13

[137] Hall & Hall, 'Introduction', *Correspondence*, i, xxxiii.

[138] *Correspondence*, i, 17. The Senate of Bremen to Oldenburg, 15 August 1653.

[139] *House of Commons Journal*, vii, 292, as quoted in *Correspondence*, i, 18 (notes): "Ordered, that Sir *Oliver Fleming* Knight, Master of Ceremonies, do communicate this Vote to the said Deputy" on the matter of "Copies of Credentials given from the Consuls and Senators of the City of *Bremen*, dated 30th of *June* 1653, unto the Lord *Henry Oldenburgh*, written in *Latin*, with the Translation in *English*... The Question being put, That this Deputy from Bremen shall have Audience by Commissioners...."

AGENT OLDENBURG:[140]

LIFE FOR THE SAKE OF BREMEN; OR, DER PROZEß.

This second scene for Oldenburg's political drama in England combined his theopolitical interest in intertwined State and Church politics, dating back to his thesis work on the Church, with the prior geo-political problem Bremen faced: Sweden. Already in England, Oldenburg began to insinuate himself into new and fruitful networks. Little is known about his private ventures during this time, but Oldenburg furthered his public exposure in continuing his correspondence with Bremen based on his letters of introduction, his hearings in Parliament by the minister of foreign affairs, and also through his meeting with Milton. It was late 1653, and Cromwell had yet to grant Oldenburg another audience, now to discuss Sweden's aggression. As a result, the Senate of Bremen had asked Oldenburg to include in their request for English assistance and observation of neutrality some form of help against the problem of Swedish dominion and usufruct. By Imperial decree of the Peace of Münster (Westphalia), the city of Bremen had been separated from the archbishopric or duchy of Bremen.[141] The Swedes had "not only expected [Bremen] to pay homage to them" but they nonetheless usurped rights the bishopric had never possessed in the past, despite the fact that these same rights had been previously nullified by the secularization of the duchy of Bremen.[142] Furthermore, the Swedes were, by and large, violating the neutrality they had previously maintained in Bremen. In the same letter to Oldenburg dated 15 August 1653 from Bremen, Sweden had, without authority, occupied more territory, built ramparts around the city, constructed bulwarks and ultimately levied contributions on Bremen's territories for a two-year period.[143] The Senate thus found in Oldenburg a negotiator for their problems since he was strategically in an opportune position, albeit he had still to achieve his audience with Cromwell.

---

[140] John Milton addresses Oldenburg in a letter dated 6 July 1654 as an "Agent for Bremen to the English Parliament." See *Correspondence*, i, 33. Milton to Oldenburg, 6 July 1654.

[141] *Correspondence*, i, 17. The Senate of Bremen to Oldenburg, 15 August 1653.

Four months passed until Oldenburg communicated Bremen's position in a letter to Cromwell dated 29 December 1653, as he had been unable to secure a decision from the Council of State upon Bremen's rights of neutrality.[144] Hall and Hall write that during this time, the Council had previously appointed 4 August 1653 as the planned date for when Oldenburg was to have an audience. In the interim, he submitted a paper on 3 September and was referred to the Committee of Foreign Affairs. On two more occasions, he expected to receive an audience, the first on 21 November and the second on 9 December, but, both times, he was referred back to the Committee.[145] Without any resolution, and not long after the dissolution of Parliament, Oldenburg was most probably frustrated by the continual lack of priority for his appeal and thus wrote *directly* to Cromwell. On 29 December 1653, he requested

> [a]t the least, to grant for the present so much, yt if, upon strict Examination made at Sea, our Ships met wth by the Ships of this Commonwealth, appear to be of Bremen, and of the list offered to be given in, and trading from and unto none but neutral places, carrying also no goods, but such as shall be specified in ye same, yt then such Ships may passe freely and safely, and not be brought up into the

---

[142] *Correspondence*, i, 17. The Senate of Bremen to Oldenburg, 15 August 1653.

[143] *Ibid.* The Swedes, from this letter, had erected ramparts encasing the city and installed bastions and a rampart with bulwarks, literally encapsulating Bremen at their mercy. (*Ibid.*).

[144] Hall and Hall, Introduction, xxxiii.

[145] *Ibid.*, as the Halls have cited from the *House of Commons Journal*, VII, 292..

> havens of England, Scotland or Ireland, for to undergoe the formalities of the Law there, where by the journey sometimes is lost, and the commodities often spoiled, and commonly the gain of the interessed swallowed up by expences.[146]

After all his efforts, Oldenburg found little resolution to the initial conflict he presented as Deputy of Bremen. He wrote back to Bremen after a long waiting period on 7 April 1654

> It hurts me greatly, however, to realise that my efforts have not been more effective and that the costs have been higher than we anticipated. I trust, however, you will take the strange and confused state of affairs into consideration rather than judge my efforts by their results.[147]

This was just two days following the declaration of peace between England and Holland.

In a letter dated the same day, Oldenburg made an announcement to Hans Jakob Ulrich, a minister in Zurich, that he was to return to "private life,"[148] which lends credence to the previous assumption of his having travelled to Zurich earlier, such as in a tutor's role, since he would appear to have known Ulrich from a period lost in the correspondence. From this point, Oldenburg remained in England as a private citizen and went to live in Kent. Yet, this was to be but a brief interlude for Oldenburg. Bremen, at this time, revolted against Sweden's assertion of power, as they tried to incorporate more of the city of Bremen into the Swedish sphere of influence. Once again, Oldenburg was called upon to act officially as a representative of Bremen. Through correspondence both from and to Albrecht Bake in the summer of 1654, we know that Oldenburg was happy to be of service in administering Bremen's plea to Cromwell. Due to political instability at the time of Cromwell's "rump" Parliament, the affairs of Bremen were to be preferably confidential. The political expediency of Oldenburg procuring help was thus in the form of a petition, rather than formal letter, as Oldenburg made reference on the day he met Cromwell that he had "just returned from an audience with the Protector" when he wrote to the Senate of Bremen in the evening of 20 October 1654.[149]

---

[146] *Correspondence*, i, 20. Cromwell had been proclaimed Lord Protector less than two weeks earlier; hence, Oldenburg wasted little time to express due deference. Oldenburg to Cromwell, 29 December 1653.

[147] *Correspondence*, i, 28. Oldenburg to the Senate of Bremen, 7 April 1654

[148] *Correspondence*, i, 23. In Latin, Oldenburg wrote to Hans Jakob Ulrich, "Now that the discords are stilled (as we believe) and it only remains for peace to be concluded I have decided to return to private life, still attentively looking out for whatever the Divine Providence may seek to attain in this century." Oldenburg to Hans Jakob Ulrich, 4 April 1654.

By this time, Oldenburg was confident in his English writing abilities and thus presented to Cromwell a balanced appeal couched in a religious protectionist tone, due to its premise being on explicitly Protestant grounds. Oldenburg was granted public audience with Cromwell on 20 October, asking that the rights, freedoms, and privileges of the city of Bremen, both in ecclesiastical and civil matters, remain unviolated and safeguarded.[150] Oldenburg informed Cromwell of Sweden's aggression by moving troops into the city itself and the eventual two-month peace agreement, which was about to terminate in the upcoming month of November. Under immediate threat, Bremen wanted the terms of peace from the Treaty of Westphalia to be both honoured and reinstated, but they required further assistance. Accordingly, Oldenburg wrote and perhaps said as much in his audience

> Such an interposition the senat and whole city of Bremen do looke upon as that, which being granted, will be the life of that treaty, and a great rejoicing of all good Protestants in Germany and Helvetia, if they shall see your highnes imbarqued in their vessel, and keeping intire the Protestant line of communication from the Ocean unto the Alps, which, if Bremen be lost, will be cutt asunder. And the city of Bremen will ever acknowledge your highness as the chief pillar, under God, of their preservation…[151]

The communication techniques in the two letters to Cromwell and the Senate of Bremen are of special interest. In the appeal to Cromwell, there is a highly stylised, formal tone, one that reads as sincerely but also entreats the assistance of England with the highest regard. When compared to the formal letter Oldenburg wrote as an intermediary the same evening, the tone changes and is direct, explanatory and more comfortable. For instance, we know from this letter to the Senate that Oldenburg stated his case to Cromwell, stressing the Swedish contravention and violation of the Articles of the Peace of Münster and the damage to the Protestant cause that would result if Bremen fell into the hands of the Swedes.[152] Oldenburg got the impression that Cromwell was taking the matters to heart because a quick reply was duly promised and that even the Master of Ceremonies (Sir Oliver Fleming) and others expressed concern that Bremen not lose its status.[153] Having to break confidentiality during the meeting, Oldenburg had to reveal the appeal in the presence of Dutch ambassadors, yet, at the same time, he procured Cromwell's intention of writing two letters of intervention within two days' time: one to the king of Sweden and another to Swedish representatives assembled for peace negotiations the following month. Five days later, on 27 October 1654, Oldenburg dispatched news to Bremen of Cromwell's mediation with the King of Sweden and enclosed a copy of Cromwell's letter. On the outset, this seemed to have been a promising affair for Bremen, but it was short lived. The letter that Cromwell sent was likely nullified by his decision to make an ally of Sweden, so that Bremen was forced in the end to accept Sweden's overlordship.

---

[149] *Correspondence*, i, 53. Oldenburg to the Senate of Bremen, 20 October 1654.
[150] *Correspondence*, i, 48. Oldenburg to Oliver Cromwell, 20 October 1654.
[151] *Ibid.*, 49.

The communication between Oldenburg, Cromwell and the Senate of Bremen suggests Oldenburg's early expertise with how to formally present an appeal, as a formal Deputy, but at the same time know how to present the entreaty and subsequently 'talk' differently *in camera* with Cromwell. Indication of this is given when Oldenburg expressed discomfort in appearing in audience

---

[152] *Correspondence*, i, 53.

[153] *Ibid.* As well, Oldenburg relayed that Bremen was not to expect financial nor military aid unless Bremen would consider adopting the status of an English Protectorate.

> …without a servant, without proper lodging, without offering entertainment, without gratuities to some of the lower officials of whose service one must make use—all [of which] is considered disgraceful.[154]

Slightly embarrassed by his insufficient remuneration, Oldenburg suggested to Bremen that he acted publicly as a "private person" so as not to arouse suspicion by others and have Bremen lose its importance amongst Cromwell's company and its objectives in foreign affairs. Oldenburg's public self was thus enacted in the guise of private conviction and reveals how he could balance adeptly between the two in formal appearances.

Much poorer by the prolonged stay as an advocate of Bremen, Oldenburg followed up with correspondence requesting financial aid to cover his expenses while in England. When this sequence of events involving Cromwell passed, so did Oldenburg's diplomatic career.[155] At the same time, however, he did not suffer a great loss by developing his skills in diplomacy—the skills needed to negotiate public and political life would prove useful throughout the next five years. This is to say, Oldenburg slowly developed through a complex series of stages into the skilled person who most critical literature takes as a starting point. Also, the Senate's influence on Oldenburg in many ways cultivated further dexterity in his rhetoric, specifically in representation—always faithful to Bremen—and public negotiation. Further, it was strikingly similar to the work he eventually would do in order to convince the natural philosophers whom he was about to meet and who would need to communicate the details of their work to him for collection and future correspondence, and its collation and distribution in the *Philosophical*

---

[154] *Correspondence*, i, 58. Oldenburg to the Senate of Bremen, 27 October 1654.

[155] Hall, *Henry Oldenburg: Shaping the Royal Society*, 16.

Transactions.[156]

It is notable, in a professional context, that Oldenburg began to intertwine his devotion to travelling, language acquisition, meeting others and networking that perhaps gave him some contentment despite having failed in his diplomatic endeavours—perhaps he never wanted to be a diplomat in the first place. At this point in his life, Oldenburg was in the moment of transition when he found himself having to renegotiate his position in the public versus private binary, which happens to be akin to the expected status performance of an editor of a scholarly publication. Oldenburg then decided to remain in England and in 1655 he received a new appointment as tutor to Richard Jones, Lady Ranelagh's son and Robert Boyle's nephew. The next section discusses the interrelatedness of his next career move and builds on Oldenburg's more 'private' actions conducted with 'public' people.

KEEPING UP WITH THE JONESES

Although Oldenburg's role as diplomat did not reoccur, this was not the end of his theopolitical interests. While he was still 'in' politics insofar as religion and politics thoroughly mixed in this time period, he was not 'of' it—instead, much of Oldenburg's attention is firmly theological, though related to other fields, including moral and natural philosophy. Oldenburg's relationship with John Milton perhaps best exemplifies his theological focus during this period. When Oldenburg writes to Milton in April/May 1656 about his early 'retirement' to travelling and tutoring, he says

---

[156] Henry, "The Origins of Modern Science: Henry Oldenburg's Contributions," 104.

> If you desire to know what my intentions in this retreat are, they ware twofold. I wish to contemplate nature and its creator more closely and at the same time to do what small service I can for my friends.[157]

Throughout his time with the young Jones, Oldenburg was to have only sporadic correspondence with Milton that eventually stopped from 4 October 1657 until 2 December 1659, when Oldenburg and Jones were in Paris for the last and final time before their return to Oxford.[158]

The correspondence they shared—when they did exchange letters—was always affectionate, such as when Milton writes to Oldenburg 1 August 1657, "I have a strong affection for you personally and also know how honourable and praiseworthy is the object of your journey."[159] As they were friends, their letters often involved matters of religion and the state, and they were always written in Latin. Oldenburg, for instance, wrote to Milton on 28 December 1656 ruminating about the Christmas holiday season:

> I am not surprised that it is hard to eradicate the strongly rooted custom of keeping holiday at this time; but I do wonder at the birth of our Lord was fixed by the Roman Church (who could easily consult the census lists) on 25 December, since in the winter shepherds hardly anywhere (at least in the temperate zone) tend their flocks out of doors, especially at night; as it is agreed they did when Christ was born... If the Christian peoples should commemorate the birth of the Redeemer at different times, that could be tolerated. But it is intolerable that they should render the birth of Christ a holy pretext for indulging in bacchanalian festivities.[160]

While sarcastic in tone, the underlying theological affiliation is clear, as is the great passion for religion that both men shared.

---

[157] *Correspondence*, i, 100. Oldenburg to Milton, April/May 1656.

[158] *Correspondence*, i, 339, see footnote 1. Oldenburg to Milton, 2 December 1659. Oldenburg resumed correspondence to Milton on 2 December 1659 writing "[t]he cares and fatigues of travel, numerous social engagements with foreigners, frequent change of residence, and many other things which it would be pointless to recount were the hindrances preventing me from testifying to my affection for you in more frequent letters" (338). Milton responded on 20 December "[t]he pardon which you ask for your silence you must rather extend to mine, for it was, if I remember rightly, my turn to write. I have been prevented not by any diminution of my regard for you (of this I beg you to be assured), but by other occupations or domestic cares; or possibly my own lack of energy for writing has laid me open to the charge of neglecting my duty" (340).

[159] *Correspondence*, i, 128. Milton to Oldenburg, 1 August 1657.

[160] *Correspondence*, i, 109. Oldenburg to Milton, 28 December 1656.

When Oldenburg and Jones were travelling in France, they rested for a considerable time at Saumur. This town, note the Halls, was a favourite resort for English and other Protestant foreigners seeking to learn the French tongue, partly because it was reportedly spoken with especial purity in this part of France, and partly because of the Protestant academy there.[161] Before Oldenburg and Jones arrived at Saumur, they stopped at Charenton where there was an important Huguenot church and many Protestant Councils were housed.[162] One matter that sparked Milton's interest concerned the confirmation of Alexander Morus' appointment, and Oldenburg received Milton's letter *en route* near Charenton.[163] Morus was the son of Scottish Presbyterians who had settled at Castres as principal of a Protestant college and minister of a church, and who later moved to a professorship of Church History in 1652 in Amsterdam.[164] While on break he visited Saumaise at Leiden, where Mme Saumaise accused him of seducing her English maid—the result was a controversy, which questioned Morus' moral authority.[165] Milton wrote back to Oldenburg 01 August 1657 a little tongue-in-cheek (again indicating their collegiality), but nonetheless concerned:

> But I wish it had been anyone else you please in Charon's boat, rather than yourself in the Charenton boat, who had heard the news which you gave me, that so infamous a minister has been called to instruct so illustrious a church; for there is good reason to fear that anyone who expects to reach heaven by the help of so unprincipled a guide will suffer the disappointment of finding himself worlds away

---

[161] *Correspondence*, i, 121, see footnote 1. Oldenburg to Boyle, 24 June 1657.
[162] *Correspondence*, i, 123. Oldenburg to Milton, 27 June 1657.
[163] *Ibid.*, 122.: "as I was returning by boat… I received confirmation of the rumour of Morus' appointment to the church there" (122).
[164] *Correspondence*, i, 35, see footnote 3. Milton to Oldenburg, 6 July 1654. Milton wrote early to Oldenburg on 6 July 1654 about the identity of Morus, and for which Milton asked Oldenburg that if he had since acquired any information about him, "I beg you to tell me of it" (34).
[165] *Ibid.*, 35, see footnote 3.

from his goal.[166]

The Halls comment on this letter that there was an audience for Milton's diatribes against Morus because some of the Protestant clergy were reluctant to receive him at Charenton—this, perhaps, was related to Milton's reply to Morus' defence of innocence entitled *Joannis Miltoni, Angli, Pro Se Defensio* (1655).[167]

Having firmly established the closeness of Oldenburg's correspondence with Milton and its strongly theological tone, it is also important to note that Milton was the original access point for Oldenburg's friendships with Samuel Hartlib,[168] Robert Boyle, and Lady Ranelagh, which appear in their nascent form in the *Correspondence* of this period.[169] That these connections derive from a religious context should not go unnoticed. Moreover, it was during his travels with Jones that Oldenburg began to relay his letters to Milton (among others) via Hartlib. The travels in this "Grand Tour of Europe" began in April 1657 and covered several locales: from Paris to Charenton and then Saumur until the Spring of 1658, following on to Dresden and Frankfurt where he met Johann Joachim Becher, who is known for his theory of phlogiston, who also sparked Oldenburg's interest in chemistry.[170] In the autumn of 1658, Oldenburg and Jones both returned to Montpellier and Castres, after which they returned again to Paris in 1659, staying for one year until their return to Oxford.[171]

---

[166] *Correspondence*, i, 128. Milton to Oldenburg, 1 August 1657.

[167] *Ibid.*, 129, see footnote 2.

[168] Boyle's sister, Lady Katherine Ranelagh, was a confidant of the Hartlib circle when Boyle was young and had just returned from the continent. The earliest letters Boyle wrote to Hartlib begin in 1647. See Charles Webster, 'Benjamin Worsley: engineering for universal reform,' *Samuel Hartlib and Universal Reformation: Studies in intellectual communication*, eds. M. Greengrass, M. Leslie and T. Raylor, (Cambridge University Press, 1994), 218-219. Webster also notes here that Boyle immediately became one of Hartlib's "most active supporters and a keen advocate of the Office of Address," 219. For a more detailed discussion of the Office of Address, its origins and developments, see Webster's *The Great Instauration*, especially pages 67-77. See also, Marie Boas Hall, 'Hartlib, Samuel,' In *DSB*, ed. Charles Gillespie (New York: Charles Scribner's Sons, 1972): 140-42; and M. Greengrass, 'Hartlib, Samuel (c.1600-1662),' In *ODNB* (Oxford University Press, 2004), http://www.oxforddnb.com/login.exproxy.library.ualberta.ca/view/article/12500 (accessed 19 August, 2005).

[169] *Correspondence*, i, 35. The Halls note that it is probably that through Milton that Oldenburg was introduced to the Boyles. As well, it was through Milton that Oldenburg met Hartlib, as Milton was a friend to the Boyles and with Hartlib (103).

Jones' travels with Oldenburg were coextensive with the young man's language acquisition. Language played another important role in the scope of Oldenburg's letters. Oldenburg wrote to his friends in various languages: French, English, German, and Latin. When he was in France, Oldenburg typically wrote Boyle, for instance, in French; yet, to Hartlib, he wrote in Latin. With this range, Oldenburg showed his adeptness at conversing on the specific interests of his friends in the language with which they were most comfortable, as well as using language to reflect the cultural environment he was in. Moreover, in doing so he adapted to the language of their learned interests. With English being but another language he accumulated after Latin, Greek and French, in addition to his native German, this was quite a feat. Oldenburg curiously, would switch languages mid-letter, whether it was from English to Latin and German and then back to English or from English to French. While in Saumur, for instance, Oldenburg wrote Boyle on 22 September 1657 about the Italian's method for writing in secret communication of invisible inks, in which he included a recipe for this ink in French not English, the language of most of this particular letter.[172] Oldenburg added that it "may be of great use, among others for besieged towns, to encourage ym wth unseen promise of succours, unsuspected by ye besiegers."[173]

---

[170] Hall & Hall, 'Introduction,' *Correspondence*, i, xxxvi.

[171] *Ibid.*, xxxvi.

[172] *Correspondence*, i, 138. Oldenburg to Boyle, 22 September 1657. The Halls comment that this "method" consisted "in writing the secret message with a colourless solution of lead acetate (made from litharge—lead oxide—and vinegar), then writing over this an innocent message in carbon ink. The recipient washes the letter with a solution or arsenic trisulphide and limewater, which would reduce the carbon and remove the deceptive message while at the same time converting the lead acetate into grey lead sulphide, so making the secret visible" (138-9).

The richness of this linguistic background led him naturally into translation work. Presumably, his first formal translation work was for Samuel Hartlib, whom Oldenburg knew because Hartlib, as an intelligencer, acted as an agent for the forwarding of letters while Oldenburg and Jones were in France. In a letter from 21 June 1656, Oldenburg wrote to Hartlib "I shall be mindful, as much as my time will permit to continue the Englishing of yr book, and the sooner you acquaint me of yr intentions to put it to the press the more haste shall I study to make with it."[174] The Halls note that this is an early indication of Oldenburg's facility with translation, as Hartlib published many works by foreign authors in translation, such as Comenius, as well as English authors like Dury and Petty.[175] Oldenburg's service to Hartlib was also more extensive than simply translating—as a reporter of national affairs in Germany and France, he kept Hartlib informed of political and academic matters:

> The K[ing] of Hungary is so farr from having been poisoned, yt he is to weare a crowne this week though that may prove poisonous to him in time. The King of France's death is confirmed here again; many rejoicing at this news, though I can hardly seen any advantage yt can thence accrew to ye Enemies of yt crowne.[176]

In the same letter they begin talking about inventions, for example Oldenburg inquiring after Dr. William Petty's "commodious way of printing, called Instrumentum Petti" and requesting information from Hartlib, as Petty was one of Hartlib's protégés.[177] Likewise, Oldenburg begins to describe reports on curiosities of inventions. This was the case when he saw

---

[173] *Ibid.*, 137.

[174] *Correspondence*, i, 101-102. Oldenburg to Samuel Hartlib, 21 June 1656.

[175] *Ibid.*, 103, see footnote 1. Also see Gerhard F. Strasser, 'Closed and open languages: Samuel Hartlib's involvement with cryptology and universal languages,' in *Samuel Hartlib and Universal Reformation: Studies in intellectual communication*, eds. M. Greengrass, M. Leslie and T. Raylor, (Cambridge University Press, 1994), p.159, when Strasser notes that Hartlib was responsible for bringing Comenius to England in 1642, at which point Comenius and the Hartlib circle "discussed the foundation of a universal college and the creation of a universal tongue, one of the college's preconditions." Jan Amos Komensky (Comenius) was interested in reforming languages, among which he analysed "individual languages with the aim of evaluating them according to general linguistic criteria"—see Jana and Vadimir Prívratská, 'Language as the product and mediator of knowledge: the concept of J. A. Comenius,' in *Samuel Hartlib and Universal Reformation: Studies in intellectual communication*, eds. M. Greengrass, M. Leslie and T. Raylor, (Cambridge University Press, 1994), 62.

[176] *Correspondence*, i, 170-1. Oldenburg to Hartlib, 18 July 1658.

> a poor lame man, yt had made a litle chariot… wherein he did set himself and drew it forwards and backwards and sidelings ad libitum. It is made wth certain wheels yt goe into and move one another, wth two iron handles, wch he, sitting in the chariot, turneth about according as he will goe, prorsum, retrorsum.[178]

Conversations continued on the topics of Huygen's pendulum and Becher's argonautical invention.[179] By December 1660, as Oldenburg expanded his network to include continental correspondents, Webster notes that he surpassed Hartlib as the English correspondent on matters of mechanical philosophy.[180]

In contrast to the Hartlib correspondence, while that with Boyle was approximately the same in number during this period, the nature of the correspondence changed as Oldenburg encountered more men of science and medicine, such as Beale, Tollé and Borel, Becher, and Southwell. He represented Boyle's interests by reporting back matters that furthered Boyle's research, and in the midst of disputes he gave Boyle precedence by directing information to him, as in the dispute over the air-pump. For instance, in 1657 he wrote to Boyle, "wherin, if I remember well, you seeme to incline to ye opinion, yt ye poison of vipers consists rather in ye rage, wherewth they bite," which referred to Boyle's "An Essay of Turning Poisons Into Medicines" (1650).[181] This kind of interaction between the two[182] developed over time through Oldenburg deferring to Boyle's interests in medicine and chemistry by reporting the news and men he constantly met. Once, while in Frankfurt, Oldenburg told Boyle that he had encountered Francis Mercury Van Helmont, who was both the son of the chemist J. B. Van Helmot and later a friend to Gottfried Liebniz, as well as his familiarity with Pierre Borel's *Biblioteca Chimica.*[183] However, the peak interest of Boyle and Oldenburg's correspondence lay in the matter of Boyle's air-pump and Oldenburg's meetings and letters with Tollé, Borel and Gasland. Oldenburg conveyed the findings of Boyle and his secret to Mr. Gasland at Dresden in a letter on 27 April 1659, writing

---

[177] *Ibid.*, 171.

[178] *Correspondence*, i, 175. Oldenburg to Hartlib, August 1658.

[179] See, for example, *Correspondence*, i, 210 and 211. Respectively, Oldenburg to Becher, 12 March 1658/9 and Oldenburg to Hartlib, March 1658/9.

[180] Webster, *The Great Instauration*, 501.

[181] *Correspondence*, i, 133-135. Oldenburg to Boyle, 29 August 1657. Oldenburg was relaying to Boyle what he had read in a piece written by Jacques Auguste de Thou.

> [a] noble English friend has already promised me the method of preparing his Ens veneris and I am sure that he will soon redeem his pledge. He makes it a condition, however that I communicate it to no one, but such as have first faithfully promised not to reveal this secret, reserving it for their own use and practice… I can transmit the secret by writing to you again as soon as it shall reach me.[184]

The same day Oldenburg wrote Boyle relaying the findings of Tollé and Borel: specifically their methods for congealing air, as well as for extracting large quantities of water from air.[185] Two days later, Oldenburg affirmed the primacy of Boyle's invention by stating to Mr. Tollé that

> [o]ne of our friends in England wrote a little while ago that an ingenious philosopher [presumably Boyle] had frankly affirmed that he had done the same thing, sufficiently amply, without using any salt or other magnet, merely by means of the shape and form of the glass vessels; and that the liquor so obtained was a very powerful menstruum which, by evaporation, furnished a good quantity of an

---

[182] *Correspondence*, i, 177-8. Oldenburg to Boyle, 10 September 1658. Also see page 178 for textual and biographical notes.

[183] *Ibid.*, 178, and note 15.

[184] *Correspondence*, i, 244. Oldenburg to Gansland, 27 April 1659.

[185] *Correspondence*, i, 247. Oldenburg to Boyle, 27 April 1659. See Also Steven Shapin and Simon Schaffer, *Leviathan and the Air-Pump: Hobbes, Boyle, and the Experimental Life* (Princeton University Press, 1985), particularly Huygens' role in disseminating the air-pump in Paris, as well as the interest of Montmor Academy members with the pump and congealing air, pp. 265-267. For information on the first pump Boyle constructed, see pp. 231-235.

> insipid salt. The same person informs me that there is in Cologne a certain Dr. Nichols, who had prepared it in a very large quantity.[186]

Oldenburg thus makes a point of forwarding Boyle's interests through the years abroad, and as their friendship and his trust in Boyle's philosophy accumulated. Moreover, when in Paris, Oldenburg was reporting to Boyle of experimentation and practice in continental science. He wrote Boyle on 25 February 1659/60 "mention[ing] to him the German writers Carricter, Erker, Hauptmann, Kessler, and Franck on the tree of knowledge of good and evil. About the completion shortly of the *Astronomia Physica*. About the book of Descartes on animals making slow progress because of the lack of figures"[187] and about other issues related to experimental science.

At this time, Oldenburg also slowly became a literary agent for men of science in England, but in a way that developed his links to the men of science in France. He comments in a letter to Mr. Saporta, a Professor of Medicine at Montpellier, and of the family of Antoine Saporta, on 6 May 1659 at Castres that

> [s]o far we have made no friends here except with some mathematicians such as Messrs. Carcavy, Pascal, Roberval, Mylon, Clerselier, and some lovers of iatrochemistry, such as Messrs. Du Clos, De la Noue, Lauberus, Le Fevre, etc.. [and] [a]s soon as we can… we shall seek the honor of friendship of Messrs. Montmor, Du Prat, Petit, Ruel and others."[188]

In the same letter, Oldenburg noted the new publications in England, notably of Thomas Willis' *On Fevers* and *On Fermentation*, and Henry More's *On the Immortality of the Soul*, the latter of whom used to correspond with Descartes. Up until June 1660, Oldenburg and Jones were frequently at the house of Henri-Louis Habert de Montmor, who is best known as the organiser of the meetings for scientific discussion he held in Paris from about 1655 to 1664—these meetings have been commonly referred to as the meetings of the Montmor Academy. Oldenburg from London wrote Montmor in one letter dated 28 June 1660 "that we remained infinitely obliged to all that noble company which meets at your house for having so kindly suffered our presence and for the great benefits which we derived from it."[189] He also added that he would make inquiries in England after the roses that they had once discussed at Montmor's house.[190]

---

[186] *Correspondence*, i, 250. Oldenburg to Tollé, 29 April 1659.

[187] *Correspondence*, i, 358. Oldenburg to Boyle, 25 February 1659/60. This letter is lost but is summarized in a memorandum in the Royal Society manuscripts.

[188] *Correspondence*, i, 227. Oldenburg to Saporta, 26 April 1659.

Thus, with regard to the nature of Oldenburg's correspondence, we witness a transformation in the breadth of topics: importantly, his interest for matters of natural philosophy, medicine, experimentation, and more particularly chemistry. In a letter to Southwell, dated 6 March 1659/1660, Oldenburg recorded that he had written to Southwell

> about the comet, about Kepler's opinion, of Mr. du Clos' cure for erysipelas, about talismans, of Digby's story about the house roofed with lead, and of the salt from the earth at Arcueil changed within fourteen months into gold by all the other metals and salts, except iron; of the way of keeping iron from rusting; of the impenetrable fabric from Florence; of feathery alum; of Borrhi at Strasbourg; about England and the meeting of Parliament; about Thurloe and the act of indemnity for Lambert; about the gift of Hampton Court to Monck; and asking for his Chinese lacquer…[191]

And generally, during the last year of his residence in Paris, the nature of his correspondence developed fully from reporting political affairs to reporting scientific affairs, hence distancing him from the political upheavals and tying himself to the stability of academic associations and growth of interest.

Nevertheless, despite his earlier interactions with Milton and Cromwell, this distance from political affairs was significant enough to allow him to return to England in

---

[189] *Correspondence*, i, 378-9. Oldenburg to Montmor, 28 June 1660.

[190] *Ibid.*, 379.

[191] *Correspondence*, i, 360. Oldenburg to Southwell, 6 March 1659/60.

1660 to witness the coronation of Charles II but also simultaneously to register with Jones as a student at Oxford. As a friend and literary agent of Boyle, Oldenburg frequented the Gresham circle's lectures and was recommended by Boyle as sufficiently adept to attend the inaugural meeting of the group that would become the Royal Society in November 1660 at Gresham, at which point he was elected to office in the nascent Royal Society.

So, what does this brief biographical overview suggest with regard to Oldenburg as subject? A series of coextensive developments and experiences standout. First, Oldenburg witnessed the early institutionalising developments in France's natural philosophic circles, especially those that would become the Académie des Sciences, e.g. Montmor Academy. Second, he observed experimentation and reported on it, relaying information back to England to his friends and patrons through the medium of correspondence. Third, the burden of correspondence as the sole means of distribution of information began to build, and fourth all of these developed in the context of his continued tutoring and involvement in the education of himself and others. Due to all of these factors, correspondents came to rely on Oldenburg for information of news from abroad and this is perhaps where he created a unique niche for himself. Languages, personal networks, the diverse experiences and travel all became interdependent, prompting him towards an editor-like function in the distribution and distillation of communication.

IV

OLDENBURG AND EDITOR FUNCTIONS

BIOGRAPHY *DA CAPO*

What, then, do we learn from Oldenburg's biography in the years before he arrives back in London having acquired a role fit for the mastering of communication? First, there is a unifying thread across these years that stitches together what would otherwise seem to be diverse elements of his life: his Masters thesis on Church-State relations launched him in a direction where his knowledge base in theopolitics and languages was rich enough to prompt continued development. This, in turn, gave him the learned credit and skills necessary for political endeavours on behalf of the city of Bremen, which thereby also launched him into theologically-influenced enterprises. Oldenburg exploited his skills in education, languages and ambassadorial work—all coincidentally overlapping with the theopolitical substance of his thesis—which again prompted him toward education as a tutor. This provided an avenue for his development as a correspondent who routinely combined letter-writing with network building through international travel. Travel as a tutor reinforced further language acquisition for his charge, networking and diplomatic skills. In this framework, Oldenburg's 'appearance' *in medias res* during the birth of the early Royal Society (as the historiography typically has it) is no longer merely fortuitous or coincidental. Oldenburg arrives instead, and more plausibly, as the unintended result of a series of circumstances, all endowing him with skills and knowledge that drew him toward such an appearance.

Oldenburg's "retreat" from the field of theopolitics was exceptionally well-timed and led him to what was his most prolific and long-lasting field of work: his Secretaryship for the Royal Society. Being on the continent during the events leading to the restoration of Charles II, Oldenburg avoided the theopolitical difficulties his attachment to Bremen, Milton, and Cromwell could potentially have prompted. Furthermore, his return during the Restoration of the monarchy led him to continue his correspondence networks in a mode now dedicated to furthering Natural Philosophical enquiry and experimentation. This positioned him advantageously. He retained his broad circle of English and continental contacts and influence despite the political upheavals that undermined the theological aspirations that first brought these circles together.

ROLE WORK

Marie Boas Hall has characterised the period after Oldenburg's diplomatic work for the city of Bremen as more of a learning enterprise—Oldenburg was "[l]earning the art of scientific communication" from 1655-1661.[192] While, clearly, this took place, something greater than merely his "preparation for [a] role as scientific news centre"[193] occurred. In effect, Oldenburg had created a public role for himself long before to the founding of the Royal Society, and each instance I have drawn attention to addresses the growth of his secure public face and identity. This is to say, if Oldenburg was in the process of learning a certain art, this art then had skills and tactics. The Royal Society, when Oldenburg was Secretary, became *de facto* public space in a very precisely defined and very rigorously policed sense—not everyone could come in; not everyone's testimony was of equal worth; not everyone was equally able to influence the official voice of the institution.[194] Oldenburg's role in the 1660s *was*, in this sense, official. How and why was it mobilised, and what was it directed at while he was learning it? How can we recognise and interpret Oldenburg in this period of years, aside from the usual depictions of him in training for a "role"?

---

[192] Hall, *Henry Oldenburg: Shaping the Royal Society*, see pp. 21-51. Hall entitles this chapter: "Learning the art of scientific communication 1655-61."

[193] Hall, 'Oldenburg and the art of scientific communication,' 277.

The scholarship on "roles" provides a useful avenue for discussing this phenomenon. "Role," insofar as it is conceived as a *social* role, is a comprehensive pattern of behaviour and attitudes that constitute a strategy for coping with a recurrent set of situations and which are normatively identified as a special entity.[195] A 'social role' is

> played recognizably by different individuals, and supplies a major basis for identifying and placing persons in a group, organization, or society.[196] It can be thought of as consisting of rights and duties, or of expected behavior, provided these terms are interpreted broadly.[197]

Thus, with every social position, there are socially prescribed duties or functions to be performed, and rights to be enjoyed as a result of those roles.[198] Roles are then socially prescribed ways of behaving in particular situations for any person occupying a given social position or status.[199] Social roles, according to theorists, typically consist of four types: basic, structural status, functional group or value roles.[200] Though they undergo change, roles develop according to types, and when they change, writes Ralph Turner, they can then be defined as "a change in the shared conception and execution of typical role performance and role boundaries."[201] It is the changing nature of a role that remains implicit—and therefore requires explicit delineation—because the prevailing tendency is to take roles as a given, and investigators thereby deal principally with execution, competence and adaptation to roles by their incumbents;[202] such is true of Henry Oldenburg. In other words, current conceptions of role pay less attention to role creation, stabilisation and change. A role tends to represent what a person is supposed to do in a given situation by virtue of the social position he holds;[203] if this changes, then the conception of role consistently necessitates adaptation and interpretation.

---

[194] Shapin, 'Pump and Circumstance,' 508.

[195] Ralph Turner, 'Role Change,' *Annual Review of Sociology*, Vol. 16 (1990), 87.

[196] Defined by Turner in his 'Role: sociological aspects,' in *International Encyclopedia of the Social Sciences* (New York, Macmillan & Free Press: 1968),p. 552, as cited in his 'Role Change,' (1990), 87.

[197] Turner, 'Role Change,' 87. Turner draws attention to the fact that this definition of role is more inclusive than some, as it stresses the *gestalt* character of the role rather than its attachment to a particular status. See page 88 in his 'Role Change'.

[198] Walter Coutu, 'Role-Playing vs. Role-Taking: An Appeal for Clarification,' *American Sociological Review* 16, no. 2 (1951): 180.

[199] Coutu, 180.

[200] Turner, 'Role Change,' 87-8.

Scholars often use "role" either to refer to characteristic behaviours or to designate certain social positions yet to be designated. Some refer to role as scripts for social conduct.[204] Moreover, disagreement still exists among the different conceptualisations of role theory because its basic theatrical metaphor was applied only loosely and because its earliest proponents (e.g. Georg Simmel and George Herbert Mead) differed in the ways they used role terms.[205] There are three common assumptions about expectations in most versions of role theory: first, these expectations are the major generators of roles, secondly, expectations are learned through experience, and thirdly, that persons are aware of the expectations they hold.[206] While expectations are significant, the researcher needs to be careful not to impart his or her own expectations onto someone else's role. Importantly, the substantive elements of a role do not necessarily change so much as the terminology changes among the various functional, cognitive, structuralist, organisational, and symbolic-interactionist theorists.

---

[201] Turner, 'Role Change,' 88.
[202] Turner, 'Role Change,' 88-9.
[203] Coutu, 180.
[204] B. J. Biddle, 'Recent Developments in Role Theory,' *Annual Review of Sociology* 12 (1986), 68.
[205] Biddle, 68. For a landmark wok on role presentation and the uses of theatrical metaphors with role, please see Erving Goffman, *The Presentation of the Self in Everyday Life* (New York: Doubleday, 1959).
[206] Biddle, 69.

Roles occur in many given instances and can change depending on the circumstances.[207] Because of the ephemeral nature of role that this implies, it is more convenient to adopt role *concepts* that take place in close studies of moment-to-moment behaviour.[208] The reason we need to discuss a role for Oldenburg is that he is often rolecast into one other designation: Secretary. Yet, the early aspects of his life and experiences point us to many instances of him conducting many roles, among which we can see various editorial-like work and the acquisition of skills that could become editor functions for the Royal Society. It would seem suitable to speak of a particular role concept called 'role-taking' for a discussion of this nature on Oldenburg. One may suggest that, based on his prior experience, Oldenburg 'took' a role as Secretary and editor in the 1660s. This is predicated on the knowledge that a person cannot take a role for which he lacks the necessary response patterns.[209] Yet, one of the main differences keeping role-playing and role-taking distinct is that in *role-playing* one does not pretend anything, whereas in *role-taking*, which is a psychological concept, one pretends he is another person.[210] Oldenburg, thus, could not pretend to 'play' a role for which there was no particular set of rules and prescriptions. However, he could play out a role for which he was creating (i.e. self-creation) based on the social and intellectual expectations of his surrounding milieu. In this way, with role-playing he would be acting like himself: a form of socially expected conduct for one holding a given social position.[211] He could also be seen as creating both a role and an identity based on that role.

---

[207] Erving Goffman, 'Role Distance,' *Where the Action Is: three essays* (London: Allen Lane, 1969), 46-47.
[208] *Ibid.*, 49.
[209] Theodore R. Sarbin, 'The Concept of Role-Taking,' *Sociometry* 6, no. 3 (1943), 275.
[210] Coutu, 181-2.

The maturation of a public role for Oldenburg requires taking role as an interpretive phenomenon. With regard to this, further concepts, like ritual, deference, demeanour, and institution, help to elaborate meanings of both public form and role and provide us with certain features involved in role performance. Thus, in order to elaborate a conception of role for Oldenburg, there are some early considerations to make. Some social theorists see role theatrically, with metaphorical and dramaturgical foundations for change and development. These authors include Georg Simmel, whose early work on role theory centred on dramaturgical understanding, and also of Erving Goffman, whose sociology concerns roles in performance and their tactics.[212] These works add to a vocabulary on role and, in this way, indicate for Oldenburg a generated, performed role of what I want to see as 'editorial.' A theatricity of the self is therefore implicit in Oldenburg, and thus provides a frame for the presentation and impression management procedures theorists, such as Goffman, discuss at length.[213]

For instance, interpretation using Goffman's scholarship[214] might suggest *ritual*,[215] or rituals of conduct, as a convenient mode for discussing Oldenburg's earlier roles and the ways that they changed over time. Goffman would consider this with reference to features of a role, which include 'deference' and 'demeanour,' which he uses as complementary and analytical terms.[216] 'Deference' Goffman refers to as

---

[211] Coutu, 182.

[212] For example, Erving Goffman, *The Presentation of the Self.* In this book, Goffman discusses at length the interactions and various meanings of performance, be it self or in teams. See note 205 for full citation.

[213] *Ibid.*, please see Goffman's chapter on 'The Art of Impression Management,' 208-237.

[214] Biddle, 72.

[215] 'Ritual' is secondary to my discussion of deference and demeanour, but for a succinct discussion of ritual see Goffman: "This definition [of ritual] follows Radcliffe-Brown's… 'There exists a ritual relation whenever a society imposes on its members a certain attitude towards an object, which attitude involves some measure of respect expressed in a traditional mode of behaviour with reference to that object." This precedes Goffman's more refined definition: "I use the term 'ritual' because this activity, however informal and secular, represents a way in which the individual must guard and design the symbolic implications of his acts while in the immediate presence of an object that has a special value for him." Erving Goffman, 'The Nature of Deference and Demeanor,' *Interaction Ritual: Essays in Face-to-Face Behavior* (New York, Pantheon Books, 1967), 57.

> that component of activity which functions as a symbolic means by which appreciation is regularly conveyed *to* a recipient *of* this recipient, or of something of which this recipient is taken as a symbol, extension, or agent.[217]

Thus, deference is "the appreciation an individual shows of another to that other," while 'demeanour' is

> that element of the individual's ceremonial behavior typically conveyed through deportment, dress, and bearing, which serves to express to those in his immediate presence that he is a person of certain desirable or undesirable qualities.[218]

Moreover, deference images, Goffman notes, tend to point to the wide society outside the interaction of a given societal hierarchy. Demeanour images tend to point to qualities that any social position gives its incumbents the opportunity to display during interaction.[219] The necessity of demeanour emphasises the pertinence of the *way* an individual handles his position *more* than to the mere rank and place of that position relative to those possessed by others.[220]

Therefore, a person like Oldenburg would require "good demeanour," if he was to be "transformed into someone who [could] be relied upon to maintain himself as an interactant, poised for communication, and to act so that others [would] not endanger themselves by presenting themselves as interactants to him."[221] Furthermore, the notions of deference and demeanour, which Goffman developed from Edward Shils' concepts of deference and deferential behaviour,[222] work together in the creation of communication and the maintenance of a role for Oldenburg. Specifically, these features redirect our attention to Oldenburg's communication presence and his ability to develop and maintain correspondence networks. Oldenburg's changing demeanour from political to natural philosophic interests and expertise, especially, transfers or blurs into the performance of certain set rituals that others came to expect of his knowledge base. Moreover, these suggest ways through which demeanours ritualise themselves in certain roles. For example, some roles can be deemed typical, while others are 'actual' in that they are established in the role performance of individuals in given positions or situations.[223]

---

[216] *Ibid.*, 81-82.
[217] Goffman, 'The Nature of Deference and Demeanor,' 56.
[218] *Ibid.*, 77.
[219] *Ibid.*, 82.
[220] *Ibid.*, 83.
[221] Goffman, 'The Nature of Deference and Demeanor,' 77.

In this vein, Mary Douglas suggests an analogical basis for institutions, in that the entrenching of ideas, which founds institutions, are social processes.[224] Further, she contends, "for discourse," within the institution, "to be possible at all, the basic categories have to be agreed on. Nothing else but institutions can define sameness. Similarity, [for example], is an institution."[225] This is to say, in order for an institution to create a role, it must draw on a similar or identical role from outside itself. Within the Royal Society, natural philosophic and experimental roles comprised the social make-up of the Society *as an institution*. The intellectual makeup of the ideas required a foundation that could secure its identity and framework for the promotion of natural philosophic ideas and talent. Connecting the physical and the intellectual was Oldenburg in his networking capacity, as he distributed and brokered knowledge both in England and on the continent. The properties of Oldenburg's knowledge and abilities, in this instance, were shared and needed by other members of what would be the Royal Society in 1662.

---

[222] See Edward Shils, 'Deference,' in his *Center and Periphery: Essays in Macrosociology* (University of Chicago Press, 1975), 276-303.

[223] Goffman, 'Role Distance,' *Where the Action Is*, 47.

[224] Mary Douglas, *How Institutions Think* (New York, Syracuse University Press: 1986), 45.

[225] *Ibid.*, 55.

The primary reason why we require an institutional understanding in order to discuss role is because, as Berger and Luckmann suggest, "the origins of any institutional order lie in the typifications of one's own and others' performances."[226] This means that one person, such as Oldenburg, shares with others specific goals and interlocking phases of performance, and that these further become typified,[227] and thereby recognised in a specific role and need for one. In other words, roles are types of actors in the context of objectified stock of knowledge common to a group of actors, e.g. correspondents, and the institutions that these actors come to comprise are embodied in the individual experiences of these actors—their input and output—by means of roles.[228] More importantly, "[r]oles appear as soon as a common stock of knowledge containing reciprocal typifications of conduct is in process of formation, a process that… is endemic to social interaction prior to institutionalization proper."[229]

Thus, prior to 1662, we would say that there was a loose integration of an institutionalised role, but it was Oldenburg's development of a strong network that permitted, in part, his further development of scientific correspondence. This came to be inexplicably intertwined with the notion of the Royal Society, as well as publishing and distributing tracts and treatises of knowledge through the Royal Society. In this, both Oldenburg's deference to other people and demeanour in his correspondence point towards his own self-creation and self-definition of role. Therefore, I trace significant instances of transformation in deference and demeanour in Oldenburg's correspondence.

---

[226] Peter Berger & Thomas Luckmann, *The Social Construction of Reality: A Treatise in the Sociology of Knowledge* (New York, Doubleday: 1966), 67.
[227] *Ibid.*, 67.
[228] *Ibid.*, 69.
[229] *Ibid.*,

Taking on the role of an editor (or assuming the role of an editor-like function) relies on the cultural capital[230] (i.e. trust) of the individual 'editor,' without which the reputation of the produced materials cannot be established. In order for a person to adopt an editor-like function, he must already occupy a position of trust within a network—or have the reputation of the institution behind him or her, i.e. deference to an institution and its members in the place of the individual him or herself. In Oldenburg's case, the institution was still being created and was not in a position to confer the cultural capital necessary for the activities requisite to his role. Nonetheless, *without* an institution like the Royal Society, Oldenburg still had a network through which he could deploy his own labour, and that is why there is a certain amount of role work that is analogical and promotes his later undertakings: *The Philosophical Transactions*. Where the Royal Society could not confer the cultural capital necessary, Oldenburg used the trust established through his communication network to continuing furthering his ends.

In summary, then, there is a useful kind of vocabulary that is created from discussions of role. Furthermore, the change in Oldenburg's interests and their development were not a hodgepodge, but were, in many ways, interlocking insofar as he was assembling (intentionally or not) elements of a role otherwise not yet formed. Identifiers such as role, role change, deference, demeanour, and institutionalised role are important to our concept of role because Oldenburg's activities developed exponentially. Oldenburg steadily built on the previous materials, especially developing his demeanour in correspondence to the point that others deferred to him and his labour as the obligatory passage point[231] to distributing natural philosophic knowledge. Therefore, a "role system" is more usefully applied to Oldenburg because it allows for the confluence of many roles to the extent that Oldenburg exhibits "role bleeding" as one blurs into another.

---

[230] For instance, see Craig Muldrew and his discussion of cultural credit as referring to the amount of trust in society, and as such consisted of a system of judgements of trust-worthiness. He also claims the Early Modern economy was a system of cultural, as well as material, exchanges in which the central mediating factor was credit or trust. See pp. 4 and 148. *The Economy of Obligation: The Culture of Credit and Social Relations in Early Modern England* (New York: St. Martin's Press, 1998), especially see pp. 4, 128.

IN PRACTICE

For these reasons, I contend the transitions between Oldenburg's roles are best discussed via role literature and theoretical discussions of roles, and thus my focus now turns to demonstrating what Oldenburg put into practice, in early form, as an 'editor' both for *and* before the *Philosophical Transactions*. This was in addition to 'other' duties that typically do not fall under the category of being a Secretary. Even at the outset, Oldenburg did not simply go to the Gresham circle and voice his intentions of becoming an editor and amanuensis for the not-yet-created Royal Society; instead, he arrived with another role in full performance, which promoted the circumstances wherein his editorial function developed. The inertia of his skills drew him in the direction where there was greatest need and where his work was least inhibited. The early life demonstrably encouraged the development of editor-like practices: publishing, peer-review, networks, dispute resolution, brokering communication, and translating. Within these practices, an editor exercises indirect power—an editor tells authors what is wanted and what work he will allow to be discussed. He thus shapes the direction of scholarship and research, alongside encouraging its course. As an editor function became necessary for the natural philosophers associated with Oxford and the Gresham circle, Oldenburg's skills were wanted, as they had proven already adroit and trustworthy. Hence, the early years of his life were about credit-building, reputation making, identity transformation, and the continued development of his roles, techniques and networks in the realm of communication, be it theopolitical or natural philosophic.

---

[231] Latour, 150, as opposed to a "non-obligatory passage point." Please see note 62 for full citation.

Before we can answer what Oldenburg put into practice from his previous years, some environmental factors—physical and intellectual—need to be accounted for. Jones and Oldenburg had returned rather hastily from Paris to London late May 1660, returning just in time to witness the triumphal entry of the restored Charles II into the capital city.[232] Following this, the summer months show a gap in correspondence from and to Oldenburg. The *Correspondence* details letters only to Montmor and de la Rivière in June, Boreel and Lady Frances Jones in August, and resumes a regular pace of letters again in September.[233] Now no longer a tutor for Jones, as Jones would likely have reunited with his family upon their return, Oldenburg was essentially unemployed.[234] For the most part, Oldenburg's private life remains obscure, with the years from 1660-1661 being no exception.[235] Oldenburg's friends, however, we can discuss during this period. The Restoration adversely affected many of Oldenburg's close network ties: Milton, albeit briefly, was forced into hiding, after which he devoted himself to literature rather than politics; Hartlib suffered financially and soon died (March 1661/2); and John Dury decided he needed time on the continent.[236] Robert Boyle, with his income and status, was an exception and probably aided Oldenburg when he lacked salaried remuneration. For instance, Oldenburg had sent Pierre Petit in October 1660 an engraving of the air-pump from Boyle's *New Experiments Physico-Mechanical touching the Spring of the Air and its Effects*, published at Oxford in 1660.[237] In order to have secured an illustration and sent it, Oldenburg must have been in regular, and likely financial, contact with Boyle—Marie Hall notes that he probably translated the book into Latin at this time for Boyle.[238]

---

[232] Hall and Hall, 'Introduction,' *Correspondence*, i, xxxviii.
[233] *Correspondence*, i, 370-383.
[234] Hall, *Henry Oldenburg: Shaping the Royal Society*, 52.
[235] *Ibid.*, 52.
[236] Hall, *Henry Oldenburg: Shaping the Royal Society*, 52-3.

Of immense importance for Oldenburg's future residence in England, as well as the continued development of his role in building natural philosophic networks, was the founding meeting of what was to become the Royal Society. The 'Oxford Society,' as it was then called, "usually met at Gresham College at the Wednesday's lecture upon astronomy by Mr. Christopher Wren."[239] Birch records that they

> continued their custom of meeting once, if not twice, a week in term-time, till they were scattered by the public distractions of that year 1659, and the place of their meeting was made a quarter for soldiers...Their meetings were then revived, and attended with a larger concourse of persons, eminent for their characters and learning, upon the restoration, 1660.[240]

This was the famous meeting held on 28 November 1660, following Wren's astronomy lecture, and those present included the Lord Viscount Brouncker, Robert Boyle, Sir Robert Moray, Drs Wilkins and Petty, as well as, of course, Wren himself. These men discussed the need for founding a "college for the promoting of physico-mathematical experimental learning" on a more regular and formal basis, or a more regular way of "debating things" according to the manner that was done informally in other countries, presumably such as France.[241] Included on the register in this meeting was Henry Oldenburg, upon a list of men "who might be admitted before any others."[242] The meetings were held regularly thereafter, but Oldenburg was not "proposed as [a candidate] for election" until the fifth meeting of these men, held on 26 December 1660.[243]

---

[237] *Correspondence*, I, 397; Hall, *Henry Oldenburg: Shaping the Royal Society*, 53-4.

[238] Hall, *Henry Oldenburg: Shaping the Royal Society*, 54.

[239] Birch, i, 3.

[240] *Ibid.*, 3.

[241] *Ibid.*, 3.

[242] *Ibid.*, 4.

Not until 6 February 1661 do we see a register of Oldenburg's name in Birch; it was at this point that "A committee was appointed for considering of proper questions to be inquired of the remotest parts of the world," comprised of Oldenburg among others.[244] Further, not until May of the same year do we again see Oldenburg's name, insofar as he presented Monsieur Morin's treatise on insects. A fortnight later, he left for Bremen on about 15 June 1661:[245] a visit that was to be his last and presumably involved the *Vicaria* that had been troubling him with respect to its proper possession.[246] Oldenburg, during his travels, visited Leiden, Amsterdam, and stopped at The Hague, meeting with Christiaan Huygens. Oldenburg's letter to Huygens, dated 24 July 1661, was written probably just after he left The Hague, from which Oldenburg conveyed a letter from Huygens to Moray upon Oldenburg's return to London by 9 August.[247] It was not until a meeting of the members of the nascent Society, held on 14 August 1661, that Oldenburg began to engage in matters for these members. Specifically, in this meeting he "exhibited" a piece of camphire wood.[248] At the next meeting we encounter his name (on 28 August) he read from one of Borri's letters to himself (the letter is now lost), which contained Borri's account of his method of preparing 'incombustible wood.'[249] Oldenburg also, on this date,

> tried the experiment of salt of cabbage in wine, but it did not succeed according to

---

[243] *Ibid.*, 4.
[244] *Ibid.*, 15.
[245] Correspondence, I, 412. See notes.
[246] Hall, *Henry Oldenburg: Shaping the Royal Society*, 60.
[247] *Correspondence*, i, 411-13.Oldenburg to Huygens, 24 July 1661. See notes on p. 413 for more information.
[248] Birch, i, 41.
[249] Hall, *Henry Oldenburg: Shaping the Royal Society*, 64; Birch, i, 42.

> the report, that it would make wine insipid; though it much abated the tastes, and made it a mixture of vinous and lixivious.[250]

Again, on 4 September, Oldenburg was called upon to make, examine and bring in a collection of quicksilver experiments.[251]

While Oldenburg's presence at meetings grew to be regular, so too did the status of the Royal Society, with respect to its patronage, develop. By the second meeting of the men at Gresham on 5 December 1660, Sir Robert Moray had already "brought word from the court, that the king had been acquainted with the design of the meeting, and well approved it, and would give an encouragement to it."[252] It was only one week later that Oldenburg wrote to Boreel, apprising him of the circumstances surrounding the nature of the meetings

> Dr. Wilkins... has been made Dean of York and elected President[253] of the new English Academy very recently founded here under the patronage of the king for the advancement of the sciences. It is composed of extremely learned men, remarkably well versed in mathematics and experimental science; eminent among them are Viscount Brouncker, our very noble Boyle, two knights—Moray and Neale—Wilkins, Ward and Wallis; two mathematical professors in Gresham College, Wren and Rooke, and another eleven besides whose names escape me now.[254]

Though not all these men were at the meeting (Oldenburg recounted to Boreel), they were all to become members of the officially established Society in 1662, with the exception of Lawrence Rooke, Gresham Professor of Astronomy, who died shortly before.[255] On 15 July 1662 a charter was passed for the incorporation of the society under the title of the

---

[250] Birch, i, 42.

[251] *Ibid.*, 44.

[252] *Ibid.*, 4.

[253] Sir Robert Moray was elected President on 6 March 1661; Wilkins had typically been the chair of the early meetings.

[254] *Correspondence*, i, 406-407. Oldenburg to Boreel, 13 December 1660.

[255] *Correspondence*, i, 407; see note. Also see Birch, i, 97-98, for biographical information on Lawrence Rooke,

Royal Society, Birch records.[256] Lord Viscount Brouncker was then elected as President, superseding Sir Robert Moray, and Henry Oldenburg, esquire, along with Dr. John Wilkins, were appointed Secretaries.[257]

Oldenburg was previously elected as a member of the council in January 1660/1, and was thereby a Fellow, but not until the first charter was he formally elected to the position of Secretary to the Royal Society. In a letter to Peter van Dam, Oldenburg recounts

> The motto on our seal is to be *Nullius in Verba.* A sound intention of this kind will attract many men, I believe, to exchange information with us; and so, if you are still of a mind to be one of them, and to communicate to me as intermediary whatever seems to you remarkable and worthy of note, I pledge myself that the Society will be most grateful for it and I promise that we will return like things by way of recompense… It is our business, in the first place, to scrutinize the whole of Nature and to investigate its activity and powers by means of observations and experiments; and then in course of time to hammer out a more solid philosophy and more ample amenities of civilization… Indeed I seriously urge all who perceive its importance to unite in aiding and perfecting it as best they can, and to work towards it assiduously so that at last, abandoning fictions and shadows, we may attain to knowledge of things as they are.[258]

Here we have, in essence, Oldenburg's job description as Secretary, as well as his aspirations for bettering the Society and his position within it. Yet, the description fits less what he *was to do* as a Secretary than it does what he *continued to do* with his correspondents—it was simply that, under the motto '*nullius in verba*,' his energies were channelled toward and for a different purpose. In other words, contrary to the meaning of the Society's motto (literally, 'nothing in the word,' which comes to mean eschewing the authority or opinion of just one person), Oldenburg's labours had rather a great deal to do with the 'word.'[259]

---

[256] Birch, i, 88.
[257] *Ibid.*, 88.
[258] *Correspondence*, i, 14. Oldenburg to van Dam, 23 January 1662/3.

Oldenburg's 'official' Secretarial post with the Royal Society provided a means for him to further cultivate and develop his previous but overlapping roles. The institutional support, which Oldenburg outlines in his own words in the previous paragraph, is critical. It was through the agency of the Royal Society, as well as its members and fellows, that Oldenburg began to create more of an editor-like voice and role, not just an administrative one. This Secretarial post, I argue, provided Oldenburg with a variety of means and ways for him to hone his previously learned skills. Specifically, enterprises arose that ranged from more detailed and frequent correspondence, translation work, publishing, committee work, editing and compiling letters, dispute resolution, and ultimately his coming to be regarded as a 'natural philosopher'[260] in his own right. This compilation perhaps raises a necessary question in this thesis: what then was Oldenburg's editor-like job description? It was, I contend, a composite of different roles that required construction growing from the overlapping roles Oldenburg had already assumed. Taken together, these comprised a range of skills that placed Oldenburg in a special and new position. I now turn to instances where we can see Oldenburg engaging in enterprises that mark his activities as similar to those of an editor's.

First, the nature of Oldenburg's correspondence during the early years of the now (1662) official Royal Society began to show signs of transformation, perhaps development, both in structure, volume and content. Volume I of the *Correspondence* ranges from 1641 to December 1662, and contains 484 pages of letters, translations and biographical notes. Volume II, in contrast, starts in January 1663 and ends in December 1665. Whereas the first contains 251 letters to and from Oldenburg, the second contains 225 of the same nature, but is more expansive: 658 pages. Forty-one years of letter roughly match the number of letters in the following 3-year, but that latter are nearly half-again increased in length. This represents a remarkable change in the manner of Oldenburg's natural philosophic correspondence during the years late 1662-65, a change that had already begun to take shape around the time he re-entered England and the Society, and thereby became more actively involved in the affairs of the Society and its aim. Features of this prolific change include not only an expansion of correspondents but also a more consistent and steady form of communication to and from authors. Correspondents within the second volume include, for example, Southwell, Beale, Spinoza, Boyle, Sorbière, Auzout and Wallis.

---

[259] See Peter Dear, '*Totius in verba*: Rhetoric and Authority in the Early Royal Society,' *Isis*, 76, 1985, 145-161.
[260] Michael Hunter, *The Royal Society and its Fellows, 1660-1700: the morphology of an early scientific institution* (British Society for the History of Science, 1982), 140.

One letter, in particular, points to a new trend in Oldenburg's correspondence: Spinoza's letter to Oldenburg in April 1662. Written in Latin, Spinoza included a diagram to illustrate his comments on the experiments of Boyle's in his *Certain Physiological Essays*, especially his diagrams on firmness and weights.[261] Although Boyle was appreciative of the comments,[262] because of the criticisms launched by Thomas Hobbes and Francis Linus against his *New Experiments Physico-Mechanical touching the Spring of Air* (1661), he was unable to respond promptly: "[Boyle] has been so disturbed with both public and private affairs… these attacks are not, indeed, directed against his treatise on niter, but against his other little book which contains this pneumatic experiments proving the elasticity of air."[263] Oldenburg had become the assumed route to resolving natural philosophic disputes. As with his political past with Bremen, and similar to the dispute between Hooke and Newton (which I have already outlined in my "Literature Review: Section II"), Oldenburg began to handle controversies, mediating them through the influence and public persona of his role—with his position in a developing institution and the cultural capital of his network, Oldenburg occupied a position of trust for natural philosophic matters suitable for an arbiter.

---

[261] *Correspondence*, i, 448-470. Spinoza to Oldenburg, April 1662.

[262] *Correspondence*, i, 472. Oldenburg to Spinoza, July 1662. Oldenburg writes, "The author himself joins me in thanking you very much for the reflections that you have communicated to us."

[263] *Correspondence*, i, 472. Oldenburg to Spinoza, July 1662.

Illustrations, as a technique in reporting natural philosophic experimentation, continued to gain prominence and appeared with more frequency in the second volume of Oldenburg's *Correspondence.* On the one hand, Silas Taylor, who performed some experiments for the Royal Society from 1663-4, wrote Oldenburg 14 July 1663 an account of 'cyder,' incorporating a diagram to aid his depiction of a barrel's design specifically for 'cyder apples':

> Lett your vessels be very tite & cleane wherein you putt your Cyder to settle, the best forme is the stund or stand wch is sett upon the lesser end; from ye toppe tapering downewards: as suppose the head to be 30 inches in diameter then lett the bottome be but 18 or 20.[264]

On the other hand, there were more complex insertions, such as the tables Hevelius created based on his lunar observations, which he reported to Oldenburg, 31 August 1664.[265] As well, there were letters based more firmly on the composition of diagrams, which was the case, for instance, with Dr. Wallis's complex letter to Oldenburg, dated 14 May 1664, concerning music scales, tones and octaves.[266] The turning point for the letters Oldenburg received took place just after he was elected to Council, and more particularly when he was elected as Secretary. By this time, Oldenburg had established himself with his reputation as Secretary for the Society; furthermore, as Secretary and a Fellow, Oldenburg could read letters he received at their meetings. This was the case with the abovementioned letters; Birch records them being read by Oldenburg on 14 May (1663), 21 September (1664), and 18 May (1664), respectively.[267]

---

[264] *Correspondence*, ii, 83. Taylor to Oldenburg, 14 July 1663.

[265] *Correspondence*, ii, 217-8. Hevelius to Oldenburg, 31 August 1664.

[266] *Correspondence*, ii, 190-201. Wallis to Oldenburg, 14 May 1664.

It is noteworthy to mention that they were all read in close proximity to the date they arrived, which points to Oldenburg's diligence with his correspondents. Moreover, the metamorphoses in the contents of Oldenburg's letters were not just in style and presentation, but also in content. This, perhaps, most of all reflected a change in Oldenburg's public face and reputation for understanding the content of natural philosophical work. Because of this, correspondents may have felt safe or comfortable in reporting first to Oldenburg since he proved himself a safe intermediary for incoming and outgoing knowledge. Contents expanded because correspondents wrote formally to Oldenburg hoping that their works would be read. Therefore, the tone and detail of the writing Oldenburg received developed.

Oldenburg was actively engaged with a Committee for Correspondence[268] within the Royal Society, which was one among others covering mechanical, astronomical and optical, anatomical, chemical, georgical topics and histories of trades, and of collecting and experimenting, but Oldenburg was only formally on the correspondence committee.[269] Oldenburg amusingly described the 'environmental' surroundings or circumstances of one such meeting that Boyle was unable to attend on 25 August 1664:

> On Friday last our Committee for correspondence met the first time at Mr. Povey where we were sorry to be without you, and without yr Queries for Guiny. In ye

---

[267] Birch, i, 280, 468, and 425.

[268] Members of this committee included, for example, Beal, Boyle, Digby, Haak, Moray, Povey, Sorbière, Wilkins, and Williamson. See Birch, i, 407.

[269] Birch, i, 406-7.

> mean time, Generall inquiries were drawn up, serving for all parts of ye world; and Authors were distributed amongst ye members of this Committee, to be perused for ye collecting thence particular inquiries for particular countries. This was our Entertainment above ground: I leave you to guesse, what our correspondence and entertainment was under ground, in the Grotto, and neer the well, yt it the Conservatory of so many dozen of wine bottles of all kinds...[270]

Birch substantiated this entry in his *History*, citing Mr. Povey's impetus for the meetings that he "being desired to name a day for the committee of correspondence to meet, moved the third Friday of every month, about three of the clock in the afternoon, at his house in Lincoln's-inn-fields."[271] Aside from socialising at these meetings, the men would "draw up inquiries" from incoming correspondence for future examination.[272] Apart from the inebriations of this committee work, it points to the acknowledgement and sanction of Oldenburg's correspondence work as being on behalf of the Society.

Meanwhile, Oldenburg was also actively labouring in translation work. Boyle entrusted Oldenburg to translate many of his works, including Boyle's *Experiments History of Colours* (1664), *Experiments and Observations touching Cold* (1665), and likely *Hydrostatistical Paradoxes* (1670). Oldenburg also translated various tracts composed by Boyle, including those excerpted from the *Philosophical Transactions*.[273] Later on, in the early 1670s, Oldenburg was even acting as a Latin secretary for Joseph Williamson, who was then Keeper of the State Paper Office under Secretary of State Lord Arlington and who soon became (1677) President of the Society for three years.[274]

Furthermore, a major, if not continuous, source of translation work was the body of letters Oldenburg received as Secretary for the Society. Oldenburg was often responsible for communicating the contents of letters from one incoming correspondent to another in order that its material be fully cognisable so as to quash or quickly quell possible priority disputes. A majority of Oldenburg's translation work was translating into Latin from languages including English, German and French. In general, he was the translator for the Society when he was Secretary, and he was thus responsible for communicating in English topics ranging from mathematics through astronomy, meteorology, natural history, medicine, natural phenomena, and natural curiosities.[275] This left Oldenburg in the role of an amanuensis for the fellows of the Royal Society. The amount of work meant for Oldenburg that

---

[270] *Correspondence*, ii, 209. Oldenburg to Boyle, 25 August 1664. Mr. Povey was an M.P. and a government official, well-known to Pepys and Evelyn, writes Hall and Hall, 211.

[271] Birch, i, 458.

[272] *Correspondence*, ii, 248. Oldenburg to Boyle, 6 October1664.

[273] Hall, *Henry Oldenburg: Shaping the Royal Society*, 284-5. An example of a 'tract' would be Boyle's *Of the Saltness of the Sea*; likewise, an example of an excerpt from the *Transactions* would be Boyle's piece of 'respiration,' 285.

[274] *Ibid.*, 107.

> [a]fter 'producing' the letters at meetings, which meant summarizing their contents, he had to translation these fairly lengthy accounts, usually to read at subsequent meetings, to edit them where necessary for publication and, to see to the reproduction of the accompanying drawings.[276]

A natural corollary of this breadth of communication and scholarly interaction was being able to identify new talent. As well as these network-elements of correspondence and presentation, the translating work implies not simply translating texts but also translating meanings. In essence, Oldenburg was the envoy of information and talent—an ambassador no longer for Bremen but now for the Society.

The other factor that is important in Oldenburg's networking is the need for 'peer review' and referees for natural philosophic information, especially as the Royal Society moved toward publishing its materials. On the one hand, dispute resolutions worked in many ways akin to what we would now call a refereeing system; this was done by

---

[275] *Ibid.*, 206.
[276] *Ibid.*, 238.

Oldenburg and other members of the Society. Yet, on the other, the 'peer reviewing' work seems to have been often managed by Oldenburg alone, since he was the one, as Secretary, first to read the majority of incoming letters. As with finding reviewers, a person working in an editorial capacity must also invite new works for submission. Occasionally, this kind of labour resulted in correspondents producing work with dedications made to the Royal Society, as was the case with Marcello Malpighi's manuscript of what came to be known as *De Bombyce* (on silkworms) in 1668/9.[277] Oldenburg originally had encouraged this work by deferring to Malpighi's expertise firstly by way of publishing the latter's microscopical study in the *Transactions* before writing to him.[278] Malpighi soon after was elected a Fellow in March 1669.[279] Moreover, by constantly reporting his information and making himself accountable for the work and information he was in possession of, he tied the *Philosophical Transactions* development of a positive reputation to his own personal reputation as editor.

It follows, then, taking into account the breadth of influences that Oldenburg's past had on his activities and his ability to carry out his labours, that we need to change how we see the foundation of the *Philosophical Transactions*—Oldenburg's primary achievement. As something that occurred at this specific moment in time, the culmination of Oldenburg's previous experiences in the *Philosophical Transactions* suggest we can recast the founding of the periodical as a *development*. By 1665, Oldenburg had massively expanded his network and activities to include new people and to reposition those already in his circle in terms of their natural philosophic work; he did not *create* it *ex nihilo*. Presenting works publicly—not just to the Royal Society fellows but also to correspondents whom Oldenburg may have considered for membership or inclusion in the Society's work—positioned Oldenburg with many editorial-like functions. In this way, the founding of the *Philosophical Transactions* developed from a conglomerate of previous activities. It also grew from the realities of Oldenburg's enormous influx of letters and the high cost of postage to mail letters daily to correspondents on the continent, not to mention the delivery lag to some countries, such as Italy where letters could take up to six months to arrive.[280] Completing the same distribution of knowledge through a correspondence network would not have remained possible on the same scale.

---

[277] *Ibid.*, 206.
[278] *Ibid.*, 206-7.
[279] Hunter, *The Royal Society and its Fellows*, 186.

The first mention Boyle made to Oldenburg of the need for a journal, to become the *Philosophical Transactions*, in surviving correspondence was on 25 August 1664. In an addendum to Oldenburg, Boyle mused

> Sr, give me leave to inreate you, yt in case you should meet wth any curious persons, yt would be willing to receave weekly intelligence, both of state and litterary news, you would doe me the favour of engaging them to me for it. The Expences cannot be considerable to persons yt have but a mediocrity; Ten lb. a yeare will be the most expected; 8. or 6. will also do the business.[281]

Before this time, Sir Robert Moray had mentioned to Christiaan Huygens as far back as 1661 the intention the Society had to "print what passes among ourselves, at least everything that may be published," but the Society was not yet formally institutionalised, nor was Oldenburg officially elected to the post of Secretary, though informally he acted in that manner.[282] Hereafter, there is no mention between Boyle and Oldenburg of Oldenburg's journal plans, which Marie Boas Hall attributes to the likelihood of

---

[280] Hall, *Henry Oldenburg: Shaping the Royal Society*, 82.

[281] *Correspondence*, ii, 209-10. Oldenburg to Boyle, 25 August 1664.

[282] Kronick, 'Notes on the Printing History.' 244; see also Brown, *Scientific Organizations in Seventeenth Century France*, 185.

Oldenburg working out the details with Boyle face-to-face.[283]

By the end of 1664, the question of the journal grew pressing. Oldenburg had received communication from one of his new correspondents (presumably Auzout)[284] at the end of November that there was word of a new journal, for which he wrote to Boyle

> He hath given me notice by his last, yt they have dessein in France to publish from time to time a Journall of al what passeth in Europe in matter of knowledge both Philosophicall and Politicall: in order to wch they will print, as he saith… (see footnote).[285]

In the same letter, Oldenburg was solicited to contribute news from England to the forthcoming journal, noting "I am very unwilling to decline this taske but yet how to undertake it, being so very single, and having so much already charged upon me, I doe not yet know. But I must remember my Motto, Providebit Dominus."[286] In January, the new French *Journal des Sçavans* was issued, and Oldenburg was by now under way to create his own, as the arrival of a continental journal likely stimulated his ambition.[287] The *Journal des Sçavans*, Hall notes, was never so ambitious a project as the prospectus might suggest, being primarily devoted to notices and brief accounts of new books in all fields of learning; further, she notes, it was not, and was never intended to be a journal devoted more than incidentally to natural philosophy and technology.[288]

---

[283] Hall, *Henry Oldenburg: Shaping the Royal Society*, 84.

[284] *Ibid.*, 83; *Correspondence*, ii, 324. See note.

[285] *Correspondence*, ii, 319. Oldenburg to Boyle, 19 November 1664. The direct quote from presumably Auzout regarding the French journal to Oldenburg the Halls have translated as the following: "1. All the books printed since 1664 and those to be printed in the future, whether new editions or reprints. 2. All experiments and new discoveries in all the arts and all the sciences—physics, astronomy, chemistry, medicine, etc. 3. The name and position of all who excel in the arts and sciences, the books which they have published, and those they plan; the death of men of letters of any repute, including the principal events of their lives with a catalogue of all they have published in order to aid in the writing of *éloge*. 4. The most famous Academies and Libraries, and what is to be fund in private collections which is rare and interesting. 5. The disputes which arise among learned men and the interesting problems which present themselves before they have been discussed in print. 6. The most notable decisions of ecclesiastical and secular tribunals. Finally, everything interesting in the world of learning which is judged worthy of note by those whose vocation is study," 324.

[286] *Correspondence*, ii, 320. Oldenburg to Boyle, 19 November 1664. "The Lord will Provide."

[287] Hall, *Henry Oldenburg: Shaping the Royal Society*, 84.

The *Philosophical Transactions* was formally decreed as a venture by Oldenburg. On 1 March 1665, at a Society meeting, it was declared

> [t]hat the *Philosophical Transactions*, to be composed by Mr. Oldenburg, be printed the first Monday of every month, if he have sufficient matter for it; and that the tract be licensed by the council of the society, being first reviewed by some members of the same; and that the president be desired now to license the first papers thereof, being written in four sheets in folio, to be printed by John Martyn and James Allestry, printers to the society.

The very first number of the *Transactions* is dated Monday, 6 March 1665, and contains 16 pages in quarto.[289] Three weeks later, "it was ordered, that the president be desired to license the second tract of the *Philosophical Transactions*, written in four sheets of paper in folio."[290] For the first edition, however, Oldenburg wrote the introduction and was declared, by Birch, 'the editor'[291] of the journal. In Oldenburg's words, the preface read as a philosophical program for the Society, forwarding its aims in print:

> Whereas there is nothing more necessary for promoting the improvement of philosophical matters, than the communicating to such, as apply their studies and endeavours that way, such things, as are discovered or put into practice by others; I therefore thought fit to employ the press, as the most proper way to gratify those, whose engagement in such studies and delight in the advancement of learning and profitable discovers, intitle them to the knowledge of what this kingdom or other parts of the world do from time to time afford, as well of the progress of the studies, labours, and attempts of the curious and learned in things of this kind, as of their complete discoveries and performances; to the end, that such productions being clearly and truly communicated, desires after solid and useful knowledge may be further entertained, ingenious endeavours and undertakings cherished, and those, addicted to and conversant in such matters, may be invited and encouraged to search, try, and find out new things, impart their knowledge to one another, and contribute what they can to the grand design of improving natural knowledge, and perfecting all philosophical arts and sciences; all for the glory of God, the honour and advantage of these kingdoms, and the

---

[288] *Ibid.*, 83.
[289] Birch, ii, 18.
[290] *Ibid.*, 27.
[291] *Ibid.*, 18.

universal good of mankind.[292]

This was the intellectually program for the journal, and later, as I have previously mentioned, Oldenburg commented that these journals were "edited and published by me alone."

Physically, the work involved in getting the tracts to press required much effort and some degree of ingenuity on Oldenburg's part. It has been reported that Oldenburg had hoped to make £150 a year from the *Transactions*, but after two years of publishing the journal he never made more than £40 a year.[293] Rather soberly, Oldenburg wrote Boyle in December 1667

> I have some ground to believe, that there are persons, who think, the Transactions bring me sufficient revenue. But I will make it out to any man, that I have never receaved above 40. lb a year upon their account (and that is litle more, than my house-rent) And now by a new agreement, I have been obliged to make, I shall not bring it to above 36. lb a year at most. How strangely therefore I must needs shift for my subsistence, and wth what distraction I must performe my tedious work, let any sober many judge.[294]

Because the roles of the "editor, publisher and printer in seventeenth-century periodicals were not clearly differentiated," and the *Transactions* was just one example of this, the onus was on one person—in this case Oldenburg—to ensure that the printers were doing their job and thereby helping him do his.[295] Another aspect of his labour for the journal was assuming the editorial work, though members of the Society would occasional review its contents. Oldenburg was responsible for translations, transliterations and for organising material and layout. All of this meant he had a great deal of authority when it came to presenting meanings and intentions from the original correspondences, which required that his knowledge of and sensitivities to natural philosophical matters be astute.

---

[292] *Ibid.*, 18, see note 'p'; *Philosophical Transactions* 1, no. 1 (1665): 1.
[293] Kronick, 247.
[294] *Correspondence*, iv, 59. Oldenburg to Boyle, 17 December 1667.
[295] Kronick, 246-7.

In actual contents and layout, the first editions of the *Transactions* were the culmination of this intellectual and physical mapping and labour. The first four issues, for example, bore the imprimatur of not only being printed by Martyn and Allestry but also that each was dated as of the first Monday of each month.[296] For a nascent journal, the labour involved in addition to being Secretary would certainly have kept Oldenburg busy. Further, the first issue was short, with only 16 pages in total. As a trend, the next two increased slightly, adding perhaps two or four pages. However, by 5 June 1665, when the fourth was published, the issues began to exceed 25 pages. As an editor, Oldenburg, by the fourth edition, was able to comfortably extend dialogues that were buttressed to shorter descriptions in the first. For example, whereas the second issue contained 'extracts' of letters, the subsequent issues relayed 'accounts' of natural philosophic matters.[297] As well, different from the first run, the following issues offer shorter sections, listing "The Contents". The success of the periodical in its reception, distribution and publication encouraged Oldenburg to eventually draw up an index of the contents, which he referred to as being "abbreviated in an Alphabetical Table: And also afterwards Digested into a more Natural Method."[298] More than the significance of the journal itself, alongside Oldenburg's correspondence, the creation of this "table" marked a noteworthy attempt by Oldenburg to create a taxonomical classification of his journal for his audience one year after its first issue.[299]

---

[296] *Philosophical Transactions* 1, nos. 1-4, (1665): 1 and 16; 17 and 32; 33 and 52; 53 and 78.

[297] In Number 2, for instance, Oldenburg prefaces the contents to include an "[e]xtract of a Letter written from Rome, concerning the late Comet, and a New one," as well as an "[e]xtract of another Letter from Paris, containing some Reflections on the precedent Roman Letter," and so forth. By numbers 3 and 4, however, 'extracts' were replaced by "accounts," "relations," and "observations".

[298] 'Back Matter,' *Philosophical Transactions* 1 (1666): 399. This 'index' is ten pages in length.

Nonetheless, the contents of the *Transactions* were vital for Oldenburg's reputation-making and role development, as these were extensions and public displays of Oldenburg's networks. For those who were interested in what Boyle was doing, Oldenburg, for instance, saved himself the time of composing individual letters explaining these matters in handwritten correspondence, and in the first issue published the "heads" of the topics Boyle had at that time in the "press" for his "*New Observations and Experiments in order to an Experimental History of Cold*."[300] In addition to the contents being informative, and Oldenburg providing the taxonomy for that information, the first few issues illustrate dispute resolution that Oldenburg would normally complete through his correspondence. For example, the controversy between Hooke's *Micrographia*, Auzout's comments, and their discussion is laid out in these issues. Oldenburg's audience derived a particular kind of safety from his journalistic reporting, as well as a commitment to detail. Also, just as the correspondence indicates a shift to including diagrams, charts and, generally, illustrations of experimentation, so too does the *Transactions* in these first few issues. Notably, in the second issue there is a numerical tabulation of production of mercury between 1661 and 1665 that was a reproduction of a letter to John Wilkins;[301] however, just two months later, Oldenburg conveyed the contents of Auzout's Table of the

---

[299] The first issue of the *Transactions* was 6 March 1665; this tabulation was created for the end of February 1666.

[300] *Philosophical Transactions* 1, no. 1 (1665): 8-9. For example, Oldenburg recorded "1. Experiments touching Bodies capable of Freezing others. 2. Experiments and Observations touching Bodies Disposed to be Frozen. 3 Experiments touching Bodies, Indisposed to be Frozen. 4. Experiments and Observations touching the Degrees of Cold in several Bodies…"

[301] 'Extract of a Letter, lately written from Venice by the Learned Doctor Walter Pope, to the Reverend Dean of Rippon, Doctor John Wilkins, concerning the Mines of Mercury in Friuli; and a way of producing Wind by the fall of Water,' *Philosophical Transactions* 1, no. 2 (1665): 25.

Apertures of Object Glasses in issue four, which takes nearly a full page.[302]

Uniquely, and importantly, as its title suggests, the *Philosophical Transactions* were "transactions"—that is to say, modes of scientific currency and information. Each transaction represented a letter of Oldenburg's reputation, and the periodical's wide circulation attested to the growth of his editor-like capacity. The popularity of the periodical, in addition to its wide distribution, gave Oldenburg a more reputable standing within the Royal Society. More than being an 'editor' for the *Philosophical Transactions*, Oldenburg was also proposing new fellows for the Society. After 1665, Oldenburg proposed Auzout (1666), Petit (1667), Malpighi (1669), de Mere de Souza (1669), and Cassini (1672), to name a few of those who would become fellows following on his proposing.[303] Of the correspondents whose letters and accounts Oldenburg published in the first few issues, Petit and Auzout were among them and who were to become Fellows shortly thereafter.

Furthermore, the successes of the *Philosophical Transactions* reveals something about Oldenburg's previous work: would it be likely for just any man, elected to the post of Secretary, to be equipped with the international brokering abilities Oldenburg possessed? The *Philosophical Transactions* stabilised Oldenburg's role, his public face maintained his reputation, and made him an 'agent' for natural philosophy. Despite the worry of anachronistic titles, *all* of these features fall under the role of an editor and were part and parcel of Oldenburg's editor-like-function within the Royal Society—it is with Oldenburg that we see the origins of a role that was to become standardised and professionalised afterward.

---

[302] Monsieur Auzout's Judgement touching the Apertures of Object-Glasses, and their Proportion, in respect of the several Lengths of Telescopes, *Philosophical Transactions* 1, no. 4 (1665): 56.
[303] Hunter, *The Royal Society and its Fellows, 1660-1700*, 68.

When those who followed after Oldenburg, such as Sir Hans Sloane, became Secretary and thereby responsible for the life of the *Transactions*, they were, in essence, attempting to replicate and further his role. If we look at the characteristics of an ideal editor for an international periodical, for instance, Oldenburg holds many of these traits, particularly in establishing a role for himself as one, whether or not we choose to call him an editor or instead refer to his editor-like practices. Firstly, Oldenburg demonstrated that he was a scholar or at the very least sympathetic to scholarly research.[304] Oldenburg's tutoring, correspondence and reporting before the Royal Society promoted his curiosity for natural philosophy that he developed in the Republic of Letters, and as is amply demonstrated in his correspondence prior the founding of the Royal Society. Secondly, Oldenburg was also a natural philosophical salesperson. Oldenburg was selling the *Transactions* for personal profit, despite it not yielding the expected amount. Thirdly, as a financial realist he kept it financially viable notwithstanding the exigencies of the period, such as the Plague. Combining these last two, the notion of 'selling authors' and building their reputations dovetailed. Fourthly, as a press and author advocate, Oldenburg ceaselessly negotiated with the Society's press—Martyn and Allestry—despite their high costs; in doing so, Oldenburg continued to advocate the role of the printers to the Society in order to secure their work in recording natural philosophic truths. Fifthly, an editor must also be a reader, as is thoroughly evidenced by Oldenburg's personal library.[305] Sixthly and seventhly, an editor must be an optimist and success realist. Oldenburg showed dexterity in balancing accounts of killing rattle snakes and of mercury mines with topics such as Boyle's history of cold in the first few issues. Eighthly, an editor must also be a detail wizard. Oldenburg demonstrated one facet of this attention to detail by the number of letters he would have to translate in order to publish them in the *Transactions.* Ninthly, an editor must communicate the joy of his work, as joy-monger, in order to promote the value and reputation of the work he is publishing. Lastly, my own addition to Harnum's list, the *Transactions* and his role as editor represents a formalisation of his previous and ongoing networks. As a predecessor to the modern notion of an editor—the first editor of a journal "edited by [him]self alone" that has continued into the Twenty-First Century—Henry Oldenburg's labours and achievements necessitate reading him as a subject with a life prior to as well as in the Society, both of which must be considered as a continuous whole and less a composition of fragments.

---

[304] Harnum, 184. The list that I draw from is Harnum's and includes that an editor be a scholar, salesperson, financial realist, press and author advocate, reader, optimist, success realist, detail wizard, and joy monger, 184-188.

[305] See Malcolm's 'Library of Henry Oldenburg' for a complete list.

CONCLUSION

"Performers can stop giving expressions but they cannot stop giving them off."

(Erving Goffman, *Presentation of the Self*, 108).

In conclusion, we witness in Henry Oldenburg's later enterprises not just a repetition of duties and roles, but expansiveness, development of expertise and ultimately formalisation of them into an institutionalised role, vis-à-vis a periodical that is still in print to this day. The production of the *Philosophical Transactions* exemplifies his abilities to combine his previously discrete skills and package them for natural philosophical distribution as an editor. The first issues in particular embodied this new-found role for Oldenburg as editor not simply because it was the culmination of his acquisition of skills but because the development of such talents into editorial practice goes beyond the conventional understanding of secretaries, specifically due to the nature of Oldenburg's interest and his adroitness in engaging with the primary material itself.

All of the data directs us, therefore, to recognise that in his founding of the first scientific periodical in England, Oldenburg exercised the role of an editor by making public his private correspondence about scientific lives, experiences, identities, experiments. Although the Secretarial post would suggest an avenue for Oldenburg to have developed a correspondence network he could formalise for publication, his previous role made this possible and ensured the continued success of it throughout his life. This was of great importance in establishing credibility for natural philosophy in Restoration England.

Furthermore, the development of Oldenburg's skills is *an editor's development*, and therefore I now propose that Oldenburg be discussed as an editor in his own right. This is in addition to his coextensive Secretaryship to the Royal Society; his antecedent experiences with Bremen and as a tutor with Jones; the advantages deriving from his previous and broad personal correspondence network, which included, notably, Milton, Hartlib, and Boyle; and, his combination of language skills as a translator in combination with his alacrity in learning new ways of regarding the natural world. Moreover, Oldenburg established a context for future editorial work in natural philosophy, and hence is tied to the origins of the modern sense of an editor's role. More than with any other person or periodical at this time, we see with Oldenburg and his work the origins of a role that clarified the features of an editor's work. He promoted the credibility of natural philosophic knowledge by tying it to the cultural capital of his own correspondence network and made it distributable; he created communication networks among those involved; and he made natural philosophic research develop out of interactions amongst those involved, all of which is based on the processing of information in periodical production. For instance, the role of a periodical is, importantly, to put interested parties in contact with one another.

By examining the various roles of Oldenburg prior to the Royal Society, and specifically how he mobilised them during the Society's early years, we see Oldenburg no longer as a passive labourer or a mere agent for natural philosophy, but, instead, as an active participant and instigator. It is hence necessary to see Oldenburg's activities in the 1640s and 1650s as a foundation and as antecedent developments toward his trajectory in the 1660s and 1670s, when he developed the role that fitted the needs of the Royal Society when he was Secretary.

BIBLIOGRAPHY

Allen, Bryce, Qin, Jian, and F. W. Lancaster. "Persuasive Communities: A Longitudinal Analysis of References in the Philosophical Transactions of the Royal Society, 1665-1990." *Social Studies of Science* 24, no. 2 (1994): 279-310.

Atkinson, Dwight. *Scientific Discourses in Sociohistoric Context: The Philosophical Transactions of the Royal Society of London, 1675-1975.* Mahwah, NJ: Lawrence Erlbaum Associates, 1999.

Avramov, Iordan. "An Apprenticeship in Scientific Communication: The Early Correspondence of Henry Oldenburg (1656-63)." *Notes and Records of the Royal Society of London* 53, no. 2 (1999): 187-201.

Barnes, S. A. "The Beginnings of Learned Journalism 1665-1730." PhD dissertation, Cornell University, 1934.

Berger, Peter and Thomas Luckmann. *The Social Construction of Reality: A Treatise in the Sociology of Knowledge.* New York: Doubleday, 1966.

Biddle, B. J. "Recent Development in Role Theory." *Annual Review of Sociology* 12 (1986): 67-92.

Birch, Thomas. *The History of the Royal Society of London for the Improving of Natural Knowledge.* 4 vols. London: A. Millar, 1756-1757.

Bluhm, R. K. "Henry Oldenburg, F.R.S. (C. 1615-1677)." *Notes and Records of the Royal Society of London* 15 (1960): 183-97.

Brown, Harcourt. "History and the Learned Journal." *Journal of the History of Ideas* 33 (1972): 365-78.

———. *Scientific Organizations in Seventeenth Century France (1620-1680).* New York: Russell & Russell, 1967.

Cohen, A. P. *The Symbolic Construction of Community.* London: Tavistock, 1985.

Coutu, Walter. "Role-Playing Vs. Role-Taking: An Appeal for Clarification." *American Sociological Review* 16, no. 2 (1951): 180-87.

Craig, Muldrew. *The Economy of Obligation: The Culture of Credit and Social Relations in Early Modern England.* New York: St. Martin's Press, 1998.

Crombie, A. C. "Mersenne, Marin." In *Dictionary of Scientific Biography*, edited by Charles Coulton Gillespie, Vol. IX, 316-22. New York: Charles Scribner's Sons, 1974.

da C. Andrade, A. N. "The Birth and Early Days of the Philosophical Transactions." *Notes and Records of the Royal Society* 20 (1965): 9-27.

Dear, Peter. *Mersenne and the Learning of the Schools*. Ithica: Cornell University Press, 1988.

———. "Narratives, Anecdotes, and Experiment: Turning Experience into Science in the Seventeenth Century." In *The Literary Structure of Scientific Argument.*, edited by Peter Dear, 135-63. Philadelphia: University of Pennsylvania Press, 1991.

———. "Totius in Verba: Rhetoric and Authority in the Early Royal Society." *Isis* 76, no. 2 (1985): 144-61.

Douglas, Mary. *How Institutions Think*. Syracuse, NY: Syracuse University Press, 1986.

Fischer, Charles C. "Editor as Good Steward of Manuscript Submissions: 'Culture,' Tone, and Procedures." *Journal of Scholarly Publishing* 36, no. 1 (2004): 34-42.

Goffman, Erving. *Interaction Ritual: Essays on Face-to-Face Behavior.* New York: Pantheon Books, 1967.

———. *The Presentation of the Self in Everyday Life*. New York: Doubleday, 1959.

———. *Where the Action Is: Three Essays*. London: Allen Lane The Penguin Press, 1969.

Greengrass, M. 2004. Hartlib, Samuel (c.1600-1662). In *Oxford Dictionary of National Biography*, Oxford University Press, http://www.oxforddnb.com/login.exproxy.library.ualberta.ca/view/article/12500. (accessed 19 August, 2005).

Hall, A. Rupert. "Henry Oldenburg et Les Relations Scientifiques au Xvii^{e} Siècle." *Revue d'histoire des Sciences* 23 (1970): 285-304.

———. *Oldenburg, Henry*. Edited by Charles Coulston Gillespie. Vol. X, *Dictionary of Scientific Biography*. New York: Charles Scribner's Sons, 1974.

Hall, A. Rupert Hall and Marie Boas. "Philosophy and Natural Philosophy: Boyle and Spinoza." In *Essays on Early Modern Philosophers from Descartes and Hobbes to Newton and Leibniz*, edited by Vere Chappell, 85-100. New York: Garland, 1992.

———, *The Correspondence of Henry Oldenburg*. Edited by A. Rupert Hall and Marie Boas Hall. Vol. 13. London: Taylor & Francis, 1986.

———, *The Correspondence of Henry Oldenburg*. Edited by A. Rupert Hall and Marie Boas Hall. Vol. Vols. 10-11. London: Mansell, 1975-1977.

———, *The Correspondence of Henry Oldenburg*. Edited by A. Rupert Hall and Marie Boas Hall. Vol. Vols. 1-9. Madison: University of Wisconsin Press, 1965-1973.

———. "Further Notes on Henry Oldenburg." *Notes and Records of the Royal Society of London* 23, no. 1 (1968): 33-42.

———. "Some Hitherto Unknown Facts About the Private Career of Henry Oldenburg." *Notes and Records of the Royal Society of London* 18, no. 2 (1963): 94-103.

———. "Why Blame Oldenburg?" *Isis* 53, no. 4 (1962): 482-191.

Hall, Marie Boas. *All Scientists Now: The Royal Society in the Nineteenth Century*. Cambridge: Cambridge University Press, 1984.

———. "Hartlib, Samuel." In *Dictionary of Scientific Biography*, edited by Charles Coulton Gillespie, 140-42. New York: Charles Scribner's Sons, 1972.

———. *Henry Oldenburg: Shaping the Royal Society*. Oxford: Oxford University Press, 2002.

———. "Oldenburg and the Art of Scientific Communication." *The British Journal for the History of Science* 2, no. 8 (1965): 277-90.

———. 2004. Oldenburg, Henry (C.1619-1677). In *Oxford Dictionary of National Biography*, Oxford University Press, http://www.oxforddnb.com/login/ezproxy.library.ualberta.ca/view/article/20676. (accessed August 18, 2005.

———. *Promoting Experimental Learning and the Royal Society, 1660-1727*. Cambridge: Cambridge University Press, 1991.

———. *Robert Boyle and Seventeenth Century Chemistry*. Cambridge: Cambridge University Press, 1958.

———. "The Royal Society's Role in the Diffusion of Information in the Seventeenth Century (1)." *Notes and Records of the Royal Society of London* 29, no. 2 (1975): 173-92.

Harnum, Bill. "The Characteristics of the Ideal Acquisition Editor." *Journal of Scholarly Publishing* 32, no. 4 (2001): 182-88.

Hawisher, Gail E. and Cynthia L. Selfe. "On Editing and Contributing to a Field: The Everyday Work of Editors." *Pedagogy: Critical Approaches to Teaching Literature, Language, Composition, and Culture* 4, no. 1 (2004): 9-26.

Henry, John. "The Origins of Modern Science: Henry Oldenburg's Contributions." *The British Journal for the History of Science* 21 (1988): 103-10.

———. *The Scientific Revolution and the Origins of Modern Science*: Palgrave, 2002.

Hill, Christopher. "The Correspondence of Henry Oldenburg." *The English Historical Review* 91, no. 360 (1976): 645-46.

Holmes, Frederic L. "Argument and Narrative in Scientific Writing." In *The Literary Structure of Scientific Argument*, edited by Peter Dear, 164-81. Philadelphia: University of Pennsylvania Press, 1991.

Hoppen, K. Theodore. "The Nature of the Early Royal Society, Part I." *The British Journal for the History of Science* 9, no. 31 (1976): 1-24.

———. "The Nature of the Early Royal Society, Part Ii." *The British Journal for the History of Science* 9, no. 33 (1976): 243-73.

Huggins, Sir William. *The Royal Society or Science in the State and in the Schools*. London: Methuen, 1906.

Hunter, Michael. 2004. Boyle, Robert (1627-1691). In *Oxford Dictionary of National Biography*, Oxford University Press, http://www.oxforddnb.com.login.ezproxy.library.ualberta.ca/view/article/3137. (Accessed 18 August, 2005).

———. *Establishing the New Science: The Experience of the Early Royal Society*. Woodbridge, UK: The Boydell Press, 1989.

———. "First Steps in Institutionalization: The Role of the Royal Society of London." In *Solomon's House Revisited: The Organization and Institutionalization of Science*, edited by Tore Frangsmyr, 13-30. Canton, MA: Science History Publications, U.S.A, 1990.

———. "Promoting the New Science: Henry Oldenburg and the Early Royal Society." *History of Science* xxvi (1988): 165-81.

———. "The Publication of Boyle's Works: Editors, Booksellers and Printers." In *The Works of Robert Boyle*, edited by Michael Hunter and Edward B. Davis. London: Pickering and Chatto, 1999.

———. "Reconstructing Restoration Science: Problems and Pitfalls in Institutional History." *Social Studies of Science* 12, no. 13 (1982): 451-66.

———. *Robert Boyle, 1627-1691: Scrupulosity and Science*. Woodbridge: The Boydell Press, 2000.

———. *The Royal Society and Its Fellows, 1660-1700: The Morphology of an Early Scientific Institution*. 2nd ed. Oxford University Press, 1994.

———. *Science and Society in Restoration England*. Cambridge: Cambridge University Press, 1981.

———. *Science and the Shape of Orthodoxy: Intellectual Change in Late Seventeenth-Century Britain*. Woodbridge: The Boydell Press, 1995.

Iliffe, Rob. "'In the Warehouse': Privacy, Property and Priority in the Early Royal Society."

History of Science 30 (1992): 29-68.

Iliffe, Robert. "Author-Mongering. The 'Editor' between Producer and Consumer." In *The Consumption of Culture, 1600-1800: Image, Object, Text*, edited by Ann Bermingham and John Brewer. 167-192. London: Routledge, 1997.

Innis, Harold. *The Bias of Communication.* Toronto: University of Toronto Press, 1951.

Johns, Adrian. "Miscellaneous Methods: Authors, Societies and Journals in Early Modern England." *British Journal for the History of Science* 33 (2000): 159-86.

———. *The Nature of the Book: Print and Knowledge in the Making.* Chicago and London: The University of Chicago Press, 1998.

———. "The Physiology of Reading in Restoration England." In *The Practice and Representation of Reading in England*, edited by James//Small Raven, Helen//Tadmor, Naomi, 138-61. Cambridge: Cambridge University Press, 1996.

———. "Reading and Experiment in the Early Royal Society." In *Reading, Society and Politics in Early Modern England*, edited by Kevin//Zwicker Sharpe, Steven N., 244-76. Cambridge: Cambridge University Press, 2003.

Kronick, David A. "Notes on the Printing History of the Early Philosophical Transactions." *Libraries and Culture* 5, no. 2 (1990): 243-68.

Latour, Bruno. *Science in Action: How to Follow Scientists and Engineers through Society.* Cambridge, Massachusetts: Harvard University Press, 1987.

Lyons, Sir Henry. *The Royal Society, 1660-1940. A History of Its Administration under Its Charters*. Cambridge: Cambridge University Press, 1944.

Malcolm, Noel. "The Library of Henry Oldenburg." In *eBritish Library Journal*, 1-54: British Library, 2005.

McGrath, C. I. 2004. Jones, Richard, Earl of Ranelagh (1641-1712). In *Oxford Dictionary of National Biography*, Oxford University Press, http://www.oxforddnb.com.login.ezproxy.library.ualberta.ca/view/article/15072. (Accessed 18 August 2005)

McKie, Douglas. "The Arrest and Imprisonment of Henry Oldenburg." *Notes and Records of the Royal Society of London.* Vol. 6, No. 1 (1948): 28-47.

———. "Origins and Foundation of the Royal Society of London." *Notes and Records of the Royal Society of London.* Vol. 15 (1960): 1-37

Ornstein, Martha. *The Role of the Scientific Society of the Seventeenth Century.* Chicago: University of Chicago Press, 1928.

Oxford English Dictionary (Electronic Resource). J. A. Simpson and E. S. C. Weiner, eds. 2nd ed. Alexandria, VA: Chadwyk-Healey, 2002. http://dictionary.oed.com.login.ezproxy.library.ualberta.ca/cgi/entry/50250666? (Accessed 15 November 2005).

Philosophical Transactions of the Royal Society. Vol. 1, Nos. 1-4 (1665): 1-79.

Privratska, Jana and Vladimir. "Language as the Product and Mediator of Knowledge: The Concept of J. A. Comenius." In *Samuel Hartlib and Universal Reformation: Studies in Intellectual Communication*, edited by M. Leslie, T. Raylor, and M. Greengrass. 162-173.Cambridge: Cambridge University Press, 1994.

Pumfrey, Stephen. "Ideas above His Station: A Social Study of Hooke's Curatorship of Experiments." *History of Science* 29, no. 4 (1991): 1-44.

———. "Who Did the Work? Experimental Philosophers and Public Demonstrators in Augustan England." *British Journal for the History of Science* 28, no.?/ (1995).

Purver, Margery. *The Royal Society: Concept and Creation*. London: Routledge, 1967.

Rattansi, P. M. "The Intellectual Origins of the Royal Society." In *Essays on Early Modern Philosophers from Descartes and Hobbes to Newton and Leibniz*, edited by Vere Chappell, 49-64. New York: Chappell Hill, 1992.

Rivington, C. A. "Early Printers to the Royal Society." *Notes and Records of the Royal Society* 39 (1984): 1-21.

Sarbin, Theodore R. "The Concept of Role-Taking." *Sociometry* 6, no. 3 (1943): 271-85.

Shapin, Steven. "O Henry." *Isis* 78, no. 3 (1987): 417-24.

———. "Pump and Circumstance: Robert Boyle's Literary Technology." *Social Studies of Science* 14, no. 4 (1984): 1984.

———. *The Scientific Revolution*. Chicago: Chicago University Press, 1996.

———. *A Social History of Truth: Civility and Science in Seventeenth-Century England*. Chicago: Chicago University Press, 1994.

Shapin, Steven and Simon Schaffer. *Leviathan and the Air-Pump: Hobbes, Boyle, and the Experimental Life*. Princeton, NJ: Princeton University Press, 1985.

Shils, Edward. *Center and Periphery: Essays in Macrosociology*. Chicago and London: University of Chicago Press, 1975.

Skinner, Quentin. "Science and Society in Restoration England." *The Historical Journal* 10, no. 2 (1967): 286-93.

———. "Thomas Hobbes and His Disciples in France and England." *Comparative Studies in Society and History* 8, no. 2 (1966): 153-67.

Sprat, Thomas. *The History of the Royal Society of London for the Improving of Natural Knowledge.* London: Martyn, 1667.

Stimson, Dorothy. "Haak, Hartlib and Oldenburg: Intelligencers." *Isis* 31, no. 2 (1940): 306-26.

Strasser, Gerhard F. "Closed and Open Languages: Samuel Hartlib's Involvement with Cryptology and Universal Languages." In *Samuel Hartlib and Universal Reformation: Studies in Intellectual Communication*, edited by M. Leslie, T. Raylor and M. Greengrass. 151-161. Cambridge: Cambridge University Press, 1994.

Syfret, R. H. "The Origins of the Royal Society." *Notes and Records of the Royal Society* 5, no. 2 (1948): 75-137.

———. "Some Early Reactions to the Royal Society." *Notes and Records of the Royal Society* 7, no. 2 (1950): 207-58.

Thomson, T. *History of the Royal Society from Its Institution to the End of the Eighteenth Century.* London: n.p., 1812.

Turner, Ralph. "Role Change." *Annual Review of Sociology* 16 (1990): 87-110.

Valle, Ellen. "A Scientific Community and Its Texts: A Historical Discourse Study." In *The Construction of Professional Discourse*, edited by B. L. Linell, P. Funnarson, and B. Nordberg. 76-98. London: Longman, 1997.

Vickers, Brian. "The Royal Society and English Prose Style: A Reassessment." In *The Royal Society and English Prose Style: A Reassessment*, edited by Brian Streuver and Nancy S. Vickers. 3-76. Los Angeles, CF: University of California, 1985.

Webster, Charles. "Benjamin Worsley: Engineering for Universal Reform." In *Samuel Hartlib and Universal Reformation: Studies in Intellectual Communication*, edited by M. Leslie, T. Raylor, and M. Greengrass. 213-235. Cambridge: Cambridge University Press, 1994.

———. *The Great Instauration: Science, Medicine and Reform, 1626-1660.* New York: Holmes & Meier Publishers, 1975.

———. "Introduction." In *The Intellectual Revolution of the Seventeenth Century*, edited by Charles Webster. London: Routledge, 1974.

Weld, C. R. *A History of the Royal Society, London.* 2 vols. London: n.p., 1848.